# PRACTICAL MEMORY TRAINING

By THERON Q. DUMONT

*MEMORY, THE KEYNOTE OF SUCCESS AND FORTUNE*

Develop and Strengthen Yourself
by Studying

# Practical Memory Training

By THERON Q. DUMONT

*AUTHOR OF "PERSONAL MAGNETISM," "SUCCESSFUL SALESMANSHIP," "MASTER MIND," ETC.*

*Contains the Author's Latest Discoveries:*
*THE SCIENCE-MEMORY, THE NATURAL METHOD OF MEMORY TRAINING*

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## LESSON I.

## MEMORY: THE MASTER KEY.

The average well-informed person regards the memory as merely a useful mental faculty, acting in conjunction with the other mental faculties in the varied processes of the human mind. Such a person is surprised to be informed, by the great authorities on psychology, that what we call memory is not a faculty at all, but rather is a peculiar quality or attribute of Mind which enables it to retain and reproduce the impressions made upon it by the outside world. Without this quality or attribute, Mind would be unable to perform its important work, and all mental evolution and growth would cease.

As Bacon has well said, "All knowledge is but remembrance." Knowledge is but a structure built up of separate mental bricks arranged in proper order according to an intelligent plan. Each brick has been a mental impression retained in the subconscious region and then recalled into the field of consciousness for use in building the structure of knowledge.

Memory is far more than a faculty of the mind. It is the quality which enables the various faculties to operate. No mental faculty can work unless the memory provides the ideas which form the material for the work of the faculties, and even the memory cannot do this, unless it has first been supplied with the original impressions

which it stores away in its wonderful subconscious storehouse.

What we call mental faculties are but areas or particular elements of the mind or brain, and each of these areas or elements has its own memory—its own special section of the great subconscious storehouse. The faculties may be considered as workmen in the great mental workshop, whereas the memory is (1) the machinery for the registering and recording of mental impressions; (2) the subconscious storehouse wherein these records are stored, and, in the case of the trained memory, systematically indexed and cross-indexed; and (3) the machinery for the lifting up into the conscious field of the mind the records so stored, when they are needed.

Knowledge is defined as: "all that which is gained and preserved by knowing." That which is gained by knowing reaches the mind first as a mental impression of greater or less strength and power. The mind does not know the outside thing itself—it can know only the mental impression thereof. And such impression is made upon that part of the mind which forms the first section of the machinery of the memory, i. e., that which registers and records the impression, in short, the memory. And, likewise, the knowledge is preserved by the second section of the machinery of memory, i. e., the subconscious storehouse wherein the records are kept. And, finally, a thing to be known, in the fullest sense, must be capable of being brought into the field

of consciousness when recorded; and this is possible only by the work of the third section of the machinery of memory, i. e., that which enables us to recollect or remember the thing. So, it will be seen, the memory is the very essence of the mind —the very key of knowledge—rather than a mere mental faculty doing is limited and specialized form of work.

The above facts being perceived and admitted, it will be seen that the cultivation and training of the memory is far more than a mere sharpening of a particular mental faculty. Instead, it is really the cultivation and training of the mind itself. Under the system employed in my institution, and given in this series of lessons, the entire mentality is developed and cultivated with far less trouble and work than many so-called "Memory Systems" require for the mere learning of some artificial and inadequate set of tables or diagrams designed to enable one to perform a few showy, spectacular feats of pseudo-memory.

Unless the entire mental machinery be well oiled and properly keyed-up to the work of true memorizing, by scientific methods, all these spectacular feats fail to benefit the person employing them. As a pastime, these things are all very well, but unless backed up with true memory culture and training they are disappointing and apt to provoke only disgust on the part of those who have paid high prices for learning them, and who have expended time and labor in

practicing the so-called instruction. In Paris, in certain scientific circles, a common subject for jesting is the case of a well-advertised teacher of pseudo-memory systems, who while an adept in giving a showy stage performance, by "trick" methods, is notorious among his friends for his absent-mindedness and his poor memory regarding business matters, engagements, and the practical things of everyday life.

Not only is "all knowledge but remembrance," but also all education is but memory. Every thing that any person has ever really learned has been learned by reason of the machinery of memory. Without this machinery all teaching would be merely the pouring of water through a sieve. Education is not merely the imparting of information—the information must be caught up by the meshes of the machinery of memory, and caused to "stick." Then the material so caught and recorded must be stored away so that it may be found. And, finally, the machinery for finding and bringing it back to the field of consciousness must be working properly, else one may as well never have gained the information in the first place.

To realize the all-important part played by the memory in education, one has but to try to imagine the acquirement of an education without the work of the memory. Such an idea is seen, from the start, to be ridiculous, for the teacher would be compelled to repeat, repeat, repeat, forever, without a single fact finding lodgment in the

mind of the pupil. As I have already said, such a process would be like an eternal pouring of water into a coarse sieve, for naught would be retained, and all would be wasted. The memory is like the fine sieve which catches and retains the solid material of the teaching, so that it may be sorted out, classified, and stored away for future use by the wonderful processes of the memory machinery, as we shall see as we proceed.

Not only is the education of each and every human individual dependent upon the presence and activity of memory, but even the simplest life-activity of every living thing is equally dependent upon the same wonderful quality of the mind. Not only does reason rest upon it, but even instinct and automatic life action has its roots in the same soil.

The lower forms of life, plant and animal, act almost entirely along the lines of instinctive mental impulse. As we rise in the scale we act with a greater degree of rational impulse, but even in the highest man the instinctive activity manifests more frequently than does its rational associate. And even our habitual motions and acts, originally acquired by education, tend to become instinctive, and sink below the plane of consciousness. But every subconscious, instinctive, or habit action is based upon memory.

Evolution from lower to higher forms is now recognized as the course for all living things. And all evolution consists is building upon foundations already laid. All such life-foundations

are built with the cement of memory, and each stone thereof is firmly embedded in this cement which holds it firmly in place, and in relation to other stones. We recognize that each life-form is built up by inheritance from preceding forms, but we often fail to realize that all inheritance is simply racial memory. Every living thing is the result of all that has preceded it along the lines of inheritance, plus its own individual experience. And the impressions which have come along the channel of the years, as instinct, have all come because of race-memory, just as truly as the individual experiences of the person are preserved by reason of his individual memory. Without memory, there could be no thought, no knowledge, even no life—for life without some degree of mental action is unthinkable.

It is not my intention or desire to lead you into the depths of scientific theorizing or speculation, in the above consideration. Such studies, while most important in themselves, are outside of the true field and scope of these lessons. I have called your attention to the important part played by memory in the mental history of the race—in the very life history of the work, in fact —merely that you may reconstruct your preconceived ideas of the nature and scope of memory. When you begin to realize just what an important part is played by memory in your own life, and in the life of all living things, then, and then only, will you awaken to the value of the scientific cultivation and training of the memory.

## MEMORY: THE MASTER KEY

A man is measured by his memory. No man is greater than his memory. No man is less than his memory. That which we know as individuality—that wonderful something which distinguishes one person from another—that mysterious mental essence which has within it the power of character and personality—has its base in the depths of memory. Wipe out from the subconscious storehouse of the memory of a man all that is contained therein—the inherited characteristics and tendencies, the acquired traits and qualities—and you have wiped out the individuality and personality, the character and "selfness" of that man. What is left is simply a blank page—a nothing. Indeed, without involving ourselves in metaphysics, we may even go so far as to say that the very essence of that which we call the soul of man is so bound up with that which we call memory that it is practically impossible to separate them, even in thought.

In short, dear student, you who are reading these words, YOU, yourself, are nothing more than a combination of memories, racial and individual—memories of feelings, ideas, tastes, inclinations, aptitudes; likes and dislikes; loves and hates; prejudices for and against; convictions, beliefs, ideas, ideals; habits of thought, feeling and action—memories one and all, imbedded in that wonderful subconscious region of the mind or soul which for want of a better name we call Memory.

Can you not see then that not only is mem-

ory the key of knowledge and education, but that it also is the key of the self, character, personality, individuality? Can you not perceive that the proper cultivation and training of the memory must, of necessity, result in the cultivation and development of all that is worth while in that which you call your "self"?

Memory-cultivation and training in reality is character building, efficiency-development, self-culture. Moreover, in cultivating and training the memory, under a true system, the student, at the same time unconsciously develops and strengthens all of the faculties of the mind, for memory underlines them all and calls them all into action. Just as a runner, striving to acquire speed by scientific exercise, of necessity develops muscle and endurance at the same time, and also develops his will-power and the faculty of concentration, so the student of scientific memory culture and training of necessity acquires many desirable mental qualities without realizing it at the time.

I can safely promise that each and every student who will follow the instruction given in these lessons will not only master the art of memory, but will also find himself a much better and far more efficient individual along all the lines of mental activity. He will find that he has acquired increased powers of attention and concentration; clearer reasoning powers; a higher sense of enjoyment of the outside world of ex-

perience; and a much higher degree of will-power.

He who masters these lessons will become a greater individual, with a fuller life—a stronger, more active, and, above all, a far more efficient individual. And this not because of any magic in my words, but solely because every mental muscle will be exercised and gradually developed until it is able to pull the maximum load without perceptible strain.

Is not this worth working and striving for? There can be only one answer, I am sure. I ask each and every student to pause at this point, and fix in his mind the ideal above indicated, and, at the same time, promise himself that he will faithfully pursue the path until he attains it.

## LESSON II.

## THE IMPORTANCE OF A GOOD MEMORY.

From the earliest days of human culture, the leaders of the thought of the world have unanimously accorded to Good Memory the most exalted position on the altar of the Temple of Mind. The world's greatest thinkers have been earnest worshippers at that altar, and have loudly sung the chant of praise to Mnemosyne, the famed Goddess of Memory.

The ancient Greek mythology told the story of Mnemosyne, the Goddess of Memory, in enraptured words, the importance of her place being shown by the fact that the Greek priesthood held that she was the mother of the nine Muses who presided over the arts and sciences, literature and song. Veiled by the poetical tissue of mythology, the importance accorded to Memory by the ancient Greek thinkers is boldly revealed. And in the legends and mythologies of other races, we find the universal tendency of the thinking mind to accord to Memory its rightful important place.

Philosophy, science, and poetry have placed their flowers and devotional candles before the altar of this goddess. One has but to turn over the pages of the leading writers of all ages, to find the most glowing tributes to her.

## THE IMPORTANCE OF A GOOD MEMORY

Emerson has told us "I would rather have a perfect recollection of all I have thought and felt in a day or week or high activity, than read all the books that have been published in a century." Richter says: "Memory is the only Paradise from which we cannot be driven away." Hood says: "Memory is the golden thread linking all the mental gifts and excellences together." Basil says: "Memory is the cabinet of imagination, the treasury of reason, the registry of conscience, and the council-chamber of thought." Helvetius says: "Memory is the magazine in which are deposited the sensations, facts, and ideas, whose different combinations form knowledge."

But why multiply these expressions of respect and regard for this sovereign power of the mind, when every individual must express himself in like spirit if he but stops to consider the matter. Let us rather pass on to the consideration of the advantage of possessing a good memory, and the disadvantage of its lack. When once we fully realize the facts of the case, we will be filled with the spirit of attainment and mastery, and will strive to accomplish and acquire the principles which will lead to the wonderful goal of Good Memory.

As Drummond well says: "From the Archangel to the brute we conceive that something analogous to an organ of memory must be possessed by each." But while every human being possesses memory in some degree, there are but few persons, comparatively who have developed

their memory to the degree possible to the average person who will devote a little time and work to the task. And this is all the more strange when one stops to consider the disadvantages under which these persons of poor memory must labor throughout life.

Locke has well said: "In some persons the mind retains the characters drawn on it like marble, in others like freestone, and in others little better than sand." There are far too many of these sand-memory persons in the world. We meet them on all sides, every day, and everywhere. They may be bright in other respects, but as the knowledge and experience has been written on the shifting sands of their poor memories, they are unstable, fickle, shifting, vascillating, and uncertain. We cannot depend upon them, and we soon pass them by in favor of others of more stable character.

These shifting sand characters lack fixed and settled purposes in life, and find it impossible to adhere to any one idea, thing or purpose in life. They are blown hither and thither by the winds of conflicting aims and desires, and, as a consequence, can never hold to any one thing long enough to accomplish any good result.

To some of you it may seem strange to attribute this shifting character to poor memory, but there are the best scientific reasons for so doing, although the general public does not realize the fact. This explanation will clear up the mystery of many cases of this kind, if you will examine

the particulars of each case. In practically every case you will find that the memory of these shifting persons is quite poor and unreliable.

In this connection, I ask you to consider the following statements from eminent authorities on the subject. Beattie says: "When memory is preter-naturally defective, experience and knowledge will be deficient in proportion, and imprudent conduct and absurd opinion are the necessary consequence." Bain says, along the same lines: "A character retaining a feeble hold of bitter experience or genuine delight, and unable to revive afterwards the impressions of the time, is in reality the victim of an intellectual weakness under the guise of a moral weakness." And Kay well sums up the situation when he says of this class of persons: "They may not be otherwise deficient in natural parts, but their memories are not sufficiently strong for anything to impress them deeply or for any length of time. All the usual impulses to action may be in full force or even in excess, but they lack the wisdom or knowledge necessary in order to act rightly or with a due regard to results. They act usually upon the spur of the moment and are constantly making mistakes. Even the teachings of experience are in a great measure lost upon them from lack of persistence."

One does not have to be reminded of the terrible handicap a poor memory is to the person in professional or business life. The habitual "forgettor" soon becomes a nuisance, and ends in be-

ing avoided by those who require and demand the services of those who can and will remember the things which should be remembered. Many a man, otherwise well equipped, has gone down in defeat because of this one weak point. "Oh, I forgot!" soon becomes monotonous and tiresome, and the average business man will manage to separate himself from the person who frequently uses it to excuse himself for things left undone or done in the wrong way.

Elbert Hubbard once said: "I know a man who is fifty-five years old. He is a student. He is a graduate of three colleges, and he carries more letters after his name than I care to mention. But this man is neither bright, witty, clever, interesting, learned nor profound. He's a dunce. And the reason is that he cannot remember. Without his notes and his reference literature, he is helpless. This man openly confesses that he cannot memorize a date or a line of poetry, and retain it for twenty-four hours. His mind is a sieve through which sinks to nowhere the stuff that he pours in at the top." Not a bit overdrawn, is it? How many men of similar weakness do you know in your own experience?

This would be a terrible state of affairs were it not for the fact that this deficiency, this weakness, can easily be rectified and cured by scientific and rational methods, such as are taught in this series of lessons. The bane is only too apparent—but the antidote is here ready to hand, easily procured and easily applied. For good

memory is not a gift bestowed upon some, and forever denied to others of the race. The best memory may be improved, and even the poorest developed into one far above the average.

One of the best of the older writers on the subject, Prof. Kay, assures the race of the above stated fact, in the following encouraging words. to which I heartily assent: "The defects of memory of which most persons complain, and with reason, are mainly, if not entirely, to be attributed to the ignorance that prevails regarding its true principles, and to the abuse and neglect to which it is subjected in our systems of education and through life. The office of the memory is to remember, and there can be no doubt that if properly trained and judiciously treated, it will remember to an extent and with a clearness that, with our present conceptions of it, will seem nothing short of marvellous."

The thousands of students of the principles taught in this course of lessons will heartily and earnestly testify to the truth contained in the words just quoted, which uttered many years ago have seemed like a prophecy of that which has been since accomplished along these lines. And, you, student, will soon be affirming this truth, for you will have demonstrated it yourself.

To realize the value of a good memory, it is necessary only to realize the handicap of a poor memory, and this I have alredy pointed out to you in the preceding paragraphs. There are no two sides to the question of the advantage of a

good memory—there is only the one side, and that is a very strong one. No sane person would for a moment waste breath on an argument against a good memory and in favor of a poor one. But even at this, there are but few persons who really realize to the full extent how desirable it is to cultivate and strengthen the memory.

The well-developed memory serves to acquire, preserve, store away, and, upon the proper occasion, to faithfully reproduce the impressions of the experiences which have come to the individual as he has progressed on the path of life. These impressions are the result of the experience of the individual—the facts that he has seen, heard, felt, read, and thought. If these experiences have been preserved in such shape that they can be reproduced and acted upon at will, then they have been worth the price paid for them by the individual. If they have not been so preserved —if they cannot be so reproduced for service and use, then they have not been worth the price paid for them, and in such case are a loss rather than a profit.

Life is concerned with the gathering and gaining of experience. And the creative power which operates the machinery of the universe has evidently designed that all experience shall be a source of profit and progress to the individual as well as the race. This is the secret of the existence and evolution of memory. The cultivation, training, and adequate use of the memory is certainly in the fullest accordance with the great

design and intent of Life. The opposite is really an attempt to defeat the creative design—an attempt to swim against the tide of Life, and its end is certain defeat and failure.

Not only should the individual use every effort to benefit by the ordinary experiences of life which have come to him, the memory of which constitutes his general knowledge of life; but he is in duty bound to himself as an individual to endeavor to retain and make use of the special experience and knowledge which have come to him in the pursuit of his special vocation, trade, profession or business. This acquirement of experience and knowledge, this retention of the knowledge, and this easy reproduction of the same for use at the proper moment—these are the things which constitute the greater part of that which we know as Efficiency.

Efficiency consists in doing any particular thing in the best possible manner. And the "best" way of doing any thing is learned only by experience—by the actual doing of the thing itself, or by knowledge gained by the experience of others in doing that particular thing. And, it will be seen at once that the efficient knowledge of the best way of doing a thing depends upon three things, viz: (1) the perception of the doing; (2) the recording of the doing; and (3) the ability to bring into consciousness the remembrance of the doing, the record of the act. A moment's thought will show you that each and every one of these three things is a distinct act

of that which we call memory. To develop efficiency in any line, one must first develop and use the memory.

Everything that you ever have learned you have acquired by the operation of these three phases of memory. You have received the impression of the senses; you have stored away in your memory the impression; you have been able to bring into consciousness the memory of the impression. You have added to the impressions, and have reasoned about them from time to time, improving a little here, and modifying a little there. But without these reproduced impressions and mental images, you could not have reasoned about the thing.

A good memory means EFFICIENCY, whatever else it may mean. And in this day of the Gospel of Efficiency, there can be no better reason advanced for the cultivation, training, and strengthening of the memory than this—that it tends toward Efficiency in every line and phase of human endeavor. Wtihout a well developed memory there can be no such thing as Efficiency. With a good memory, Efficiency becomes merely the result of patience and perseverance, aided by average judgment and intelligence. Even genius is seen to be "the infinite capacity for taking pains"—plus a good memory.

## LESSON III.

## PHILOSOPHY OF MEMORY.

I am a firm believer in the theory which holds that in order to best apply any art it is necessary to know something of the science underlying that particular art. To put it another way, I would say that in order to fully manifest the "how" side of anything, it is well to know something regarding the "why" side of the thing. One who is familiar merely with the "how" side of a thing is apt to become merely an automaton or machine; while the one who seeks only the "why" side, is apt to develop into an impractical theorist incapable of transmitting his knowledge into practical work.

The sane course then is seen to be the proper combination of the "why" and the "how." One, to be efficient, must have an acquaintance with both the "know," and the "know how" phases of the subject before him. The child with its continual cry of "why?" is obeying an instinct which recognizes this principle; while the active youth feels within himself an insistent instinctive demand to learn how to do things, as well as to be told the philosophy of things.

For this reason, I have always felt it incumbent upon me to acquaint my students with something regarding the philosophy of the things which I purposed teaching them to attain, perform, work out, before I laid down the

rules of the actual performance. My experience has taught me that a pupil who has at least a general idea of the reason and general philosophy of a subject, will in the end outstrip one who has been merely taught the rules of performance. It would seem that instruction regarding the "why" side tends to prepare the soil for the sowing of the seeds of the "how." Accordingly I shall acquaint the student of these lessons with enough of the philosophy of memory to enable him to intelligently apply the actual working principles of memory culture and training which are given him in this course of instruction. And I earnestly advise each and every student to carefully study such parts of these lessons, and not to pass them over. I do not wish to make of you merely a memory machine—I wish to develop you into a thinking, reasoning individual, with well balanced faculties backed up with an exceptionally good memory, and a knowledge of its laws which will enable you to use it to the best advantage.

But do not imagine that I am asking you to plunge into the depths of metaphysics or theoretical psychology. I am not! I leave these studies to those you have the time and inclination to dally with them, but, as for me I find my time better employed with the more practical phases of the science of the mind. So do not fear, dear students, you will not be asked to wander off into these bye-paths—you will always find your feet on the firm, sound, broad highway.

I shall not even attempt to theorize over the actual nature of the memory. As a matter of fact, no one really knows this, though many theorize regarding it. The fact is that no one can ever explain just what memory is, in itself, without first explaining just what Mind is —and that is beyond the power of the reason of man to accomplish.

Nor shall I attempt to dogmatize regarding the relation between mind and brain—I shall let the opposing factions continue their dispute regarding this point, undisturbed by me. The student may hold to either view, so far as practical results are concerned, for my system is workable under any theory, as it depends upon neither for its efficacy.

And, I advise my students to pass over these ultimate questions, and confine themselves to the workable philosophy of memory which I shall now present to them. For my philosophy of memory is essentially a "working philosophy"—neither more nor less. It is scientific, rather than metaphysical. Edison spends but little time speculating over what electricity really is in itself, but he has his own working philosophy regarding it which he turns to practical account. Neither did Newton speculate regarding the ultimate nature of Gravitation—he contented himself with discovering its laws of operation. And we shall follow this course in considering the philosophy of memory. We shall consider its

working laws, that we may then apply the same in operating its machinery.

Following a favorite figurative illustration of my own, I ask the student to accustom himself to thinking of the memory as a kind of phonograph machine. But this phonograph machine is far more complex than the ones with which we are familiar. Yet the mental image of the one will help you to understand the other, and to operate its machinery to the best advantage.

What does our memory phonograph do? In the first place it receives impressions from the senses (and from thought-processes) and a record is thus formed. In the second place, it files away these records, with more or less care, and with a certain degree of attempt to index and cross-index them, so that they may be found if needed later. In the third place, it has its hidden wonderful machinery for finding these stored away records, and then bringing them into the field of consciousness in a manner similar to reproduction of recorded sounds by the ordinary phonograph.

The similarity between the phonograph and the memory is startling, and it extends even to many small details, as you will perceive later on. A clear perception of this resemblance will aid you wonderfully in cultivating the memory. Strange to say, the clear perception of the nature of the working of the memory machinery seems to act as a lubricant to the machinery itself. I have known students to manifest a decided im-

provement in memory immediately after the first lesson in which they grasped this mental picture of the memory machinery—the picture of the recording and reproducing machinery of memory. You, personally, may have a like experience. At any rate, you will find it easier to apply the rules of memory culture. This is much better than speculating regarding the ultimate nature of mind, or its actual relation to the brain, is it not?

One of the first objections to the above illustration or figure of speech which occurs to the reasoning student is that while the phonograph registers and records all sounds reaching it, the memory seems to register and cord only a few of the many impressions reaching it from the outside world. He arrives at this conclusion by reason of his personal experience that he can remember only a small portion of the impressions which have undoubtedly reached his mind. But he is mistaken here, for the facts of psychology do not bear out his first opinion.

It is true that there are many impressions reaching the mind which make such a faint record that it is extremely improbable that they will ever be reproduced under normal circumstances. But it is a fact of psychology that every impression reaching the mind makes its record on the memory, faint though it be in many instances.

And it is also a fact that many of these overlooked impressions have made even a sharp record, as is evidenced by the fact that after-

ward, sometimes many years afterward, the impression is reproduced. How often have we tried to recall some past impression, only to give it up as having been forgotten, when a little while later, all of a sudden, the impression is reproduced sharply and clearly by the memory phonograph? Where was it in the meantime? Can you not see that there is a great subconscious storehouse for these memory records, wherein they dwell until they are reproduced; and wherein they are replaced after having been reproduced? Many of these records are never reproduced, while others lie there unused until some associated idea brings them up in a most unexpected and startling manner.

Some of the best authorities in psychology hold firmly to the idea that every impression that has ever been in the conscious field has left its record, and that that record will and can be reproduced under the proper circumstances. In other words, that nothing is ever actually lost or forgotten, that has ever been experienced consciously. As De Quincey has said: "There is no such thing as ultimate forgetting. Traces once impressed upon the memory are indestructible. A thousand accidents may and will interpose a veil between our present consciousness and the secret inscriptions on the mind. But alike, whether veiled or unveiled, the inscription remains forever."

A peculiar phenomenom of memory, often overlooked by even the best thinkers, is the fact

that even when we are unable to recall an idea or other impression, we really have a dim recollection of it, for otherwise we should not even think of trying to recall it, nor would we be able to recognize it as a past impression when it finally presents itself. Sometimes this shadow of memory (for such it may be considered) is very dim—a very shadow of a shadow, so to speak—and again it is tantalizingly near to consciousness. A large portion of the things which we seem to "almost remember," abide in this shadowy way. An important point in this connection is that the fact that there is a shadow is an indication that the reality behind the shadow is in existence, and that by proper effort it may be brought into the field of consciousness.

As we proceed in these lessons we shall see that the three vital points in the cultivation of a good memory are as follows: (1) the securing of good, strong, clear impressions; (2) the systematic arrangement of the records, and the scientific indexing and cross-indexing of the records; and (3) the adjusting of the machinery of reproduction by means of the will. These three points are all important, and I shall call your attention to them frequently, and shall invite you to consider them from a variety of angles. You would do well to fix them firmly in your mind at this stage of your study, for by so doing you will tend to automatically classify the facts belonging to each point as they arise in the lessons.

The original impression depends for its

strength, depth and clearness upon the amount of attention given it at the time of the impression. And, as attention frequently depends upon interest, it follows that the more interest we bestow upon a thing the greater the strength of the impression upon the memory, and, as a consequence, the greater degree of ease in reproduction in the future. For it is an established fact of psychology that the more strongly impressed ideas are more easily remembered than the less strong ones. In this connection, you should also remember that an impression originally weak may be strengthened by bringing it before the conscious attention by memory reproduction. Here is one of the exceptions to the phonograph illustration, for in the case of the phonograph each reproduction tends to wear out the record, whereas in the case of the memory each reproduction deepens the original impression and facilitates its subsequent reproduction.

It has been claimed by eminent authorities that if a person were to pay marked attention to everything that reached his senses, he would be able to remember distinctly every item of his experience. Such a degree of attention, of course, would require practice and training of the will, for attention is a distinct act of the will—its most marked action, in fact.

But it would be the veriest folly for any one to attempt to attend so fixedly to every item of his experience, for it would not only prevent his

proper understanding of the principal things of life, but would also burden his memory with distinct images of unimportant and trivial things. In the life of the active man of today, with its insistent demand for specialization, such a course would be actually disadvantageous, although perfectly possible in theory. Instead, the attention should be devoted to the important things of experience, particularly along the lines of the particular speciality favored by the person.

For the reason just mentioned, I have always frowned upon the idea that the proper way to improve the memory is to train it to commit useless and foolish words or things. These things not only unduly strain the interest and attention, but choke up the memory with a lot of trash and junk, and result in harm rather than good. Many of the freak-memory persons who give public exhibitions of their "wonderful power" have lost much of their original reasoning and constructive power. They have gone against nature, instead of with her. They have duplicated the folly of the "strong men" who have developed certain muscles of the body to an abnormal degree, but have impaired their general health and normal muscular ability by reason of their excesses and misdirected perseverance. The safe rule is to keep close to nature, and to proceed along the channels she has laid out for us. A word to the wise is sufficient—or at least should be so.

## LESSON IV.

## MEMORY: HIGH AND LOW.

The degree of impression upon the memory depends largely upon the attention bestowed upon the thing causing the original impression. Again, the degree of attention accorded a thing depends largely upon the interest that particular thing has for the individual experiencing it. As memory reproduces most readily the strong impressions made upon it, and as these strong impressions are the result of interested attention, it follows that one's interest may be gauged and measured by the character of the things most easily remembered by him. Common experience proves the corectness of this hypothesis.

We find persons whose memory is quite deficient along many lines, but who readily recall the most minute details of the things in which they are particularly interested. A man will remember the details of his business experience, usually. A woman will remember even trivial details concerned with the dress of other women, and the details of her own love affairs. Many a man has been embarrassed when asked if he remembers certain anniversaries when they occur —his wife, or sweetheart, has a distinct recollection of them, while the poor man has completely forgotten them. A religious person will remember many things about a sermon which has es-

caped the memory of the person not so religiously inclined. The explanation is that the attention followed the interest, and the impression on the memory was correspondingly strong.

An amusing illustration of this principle of memory is found in the recital of a tale or experience by a person of a petty and commonplace mind. The recital is found to be filled with an abundance of trivial, petty details, having no real connection with the case, and which serve to weary the hearer and to distract his attention from the main facts. One soon wearies of the "sez he, sez she," and "sez I", of these good folks. A recital of some trifling incident of a love affair, told by one rattle brained young girl to another in a crowded street-car, will amaze the intelligent person who is unable to escape the infliction, not only because of its waste of time, but also because of the wealth of unimportant detail which the memory of the "pin-headed" maiden has stored away and then reproduced.

The above principle is frequently illustrated in the court room, by the testimony given by a certain class of witnesses on the stand. They seek to embroider their story with a deep fringe of petty detail having no real relation to the point at issue. In fact, it is often found that they are unable to relate their experience unless permitted to tell it in their own way, reciting all the irrelevant side impressions in precisely the order in which they occurred. To force them to omit one or more of these petty details seems to interrupt the stream

of memory. They must be allowed to recite it from A to Z, just as the school-child recites his alphabet.

This brings us to the consideration of another fact of primitive memory, i. e. that the most elementary form of memory is that of recalling a list of names, or objects, in the precise order in which they have been presented to the mind. As this is of almost a mechanical nature, rather than an intellectual feat, it is not surprising that we find that, as a rule, it is found easier of accomplishment by children and persons of little education, than among educated cultured persons. Nay, even the parrot is an adept at this form of memory exhibition, and, really, many of the spectacular exhibitions of this kind of memory are but an enlargement of the memory powers of that imitative bird. There is no real intellectual power in the whole performance. And yet we are asked to admire and praise such deplorable exhibitions in the name of "memory culture."

The best authorities agree upon the above point, and the older writers were wont to illustrate the point by many examples from history and their own experience. For instance Granville strenuously held that this kind of memory "is not either a very exalted or an intellectual faculty. The lower animals and many idiots excel intelligent men in this quality." Gregorovius recites the case of a Corsican who was able to repeat over 35,000 names after once having heard them, but who was lacking in intellectual quali-

ties—he was a human parrot and nothing more. Kay says that this form of memory is "the very lowest form of memory, and fools and even idiots are sometimes found to manifest it in a very remarkable degree." Watts mentions cases of persons having this form of parrot-memory developed to an amazing strength and extent, but whose intellect and judgment were very weak, in fact, in some cases "but one degree above an idiot."

Farrar relates the instance of a poor creature in his father's parish, who though unable to give an intelligent reply to a single question, or to be trusted to feed himself, could, nevertheless, "remember the day when every person had been buried in the parish for thirty-five years, and could repeat with unvarying accuracy the name and age of the deceased and the mourners at the funeral." This was possibly a higher order of memory than some of the similar cases, for the poor creature was undoubtedly filled with a morbid interest in funerals and graveyards, and his attention following his interest caused the deepest kind of memory impression. Verdom recites the case of an idiot who "could repeat a sermon verbatim, indicating also where the minister blew his nose or coughed during the performance"—this, of course, was pure parrot-memory.

The student of memory must remember that, scientifically speaking, there is no such thing as Memory in the sense of a single faculty. Instead, each faculty, or set of faculties, has its own mem-

ory quality, and, consequently, a man may be deficient in one kind of memory, and at the same time have a highly developed memory along other lines. While it is true that the general improvement of the power of attention, association and recollection, tends to improve the memory regarded as a whole, it is also true that in order to develop any special phase of memory the student must apply the principles and methods designed for his special case, as I shall point out as we proceed. When this is once understood the folly and futility of the "trick system" schools of memory become very apparent.

The secret of the real difference between the lower, mechanical forms of memory, which I call "parrot-memory," on the one hand, and the higher, intelligent forms of memory, on the other hand, is found in an understanding of that great second principle of memory, which is known as "association," and regarding which I shall have much to say in this course of lessons. In the lowest form of memory the only association between the stored away items is the association of sequence, or professional relation. The persons in whom this form of memory is well developed seem to instinctly link their received impressions only by the link of the order in which the impressions are received. They remember "c" only because they have remembered "b." The child who can glibly run over the multiplication table correctly, from "twice one is two" to "twelve times twelve is one hundred and forty-four,"

often finds it difficult to tell you off hand "how much is six times eight?" It is only after it has applied the multiplication table in actual work that new associations are set up, and new links of memory formed.

Mere mechanical memory of this kind brings with it no understanding of the things remembered—other associations are necessary for the latter mental action. And it is surprising to note at times to what an extent the "knowledge" of some persons is made of memories of this kind. The parrot-memory tends to develop the parrot mind. Many persons will repeat gravely, with an air of great wisdom, certain phrases, and expressions of opinion which they have read or heard, and often manage to "get away with it" as the current slang so aptly expresses it. A little trouble, however, will reveal the astounding fact that these persons have no real conception of the true meaning of the phrases they use, and no clear grasp of the principles which they so positively announce as their own. They are in the same class with the persons mentioned by Stewart when he says—"I have known persons who having forgotten completely the classical studies of their childhood, were yet able to repeat with fluency long passages from Homer and Virgil, without annexing an idea to the words they uttered."

In strong contrast to the lower form of memory to which I have just called your attention, is that other and higher form of memory which

is the distinguishing mark of men of intellectual ability in any walk of life or human effort. In this higher form of memory not only is a single impression easily recalled, but along with it—bound to it with many ties and links of association—are other impressions, facts, bits of knowledge, which give the idea an intellectual and usable value. The truly educated man, the real efficient man in any line of work, has this form of memory highly developed, while he may be very deficient in the lower form of memory to which I have alluded. There is very little of the parrot about these persons.

To an individual with this higher form of memory well developed, each new idea or impression brings to his mind many other ideas or impressions related to the new one by some of the higher forms of association. He attaches the new idea to many of the old, and thus has added to his fund of available information. The principle of comparison, which lies at the foundation of all processes of reasoning, is thus called into play, and accordingly memory and intellect work together. Instead of the memory acting solely along the lines of the association of mere sequence or contiguity, it works more and more along those of the association of similarity.

This higher form of memory naturally leads to the development of what is known as constructive imagination. By constructive imagination is meant that form of imagination in which the mind brings before it the associated facts and

ideas of experience, grouped together by the memory; and then proceeds to form new groups by an effort of the will aided by the imaging faculty. The inventive mind of an Edison gives us a splendid example of this form of mental activity, and a moment's thought will show you the important part played by the higher form of memory in such work. In the mind of an Edison every fact is linked to innumerable other facts by the laws of associative memory—give him the loose end of a fact, and sufficient time, and he will find something associated with it which will fit in the place he is holding ready for it. The same thing is true, in a less degree, of any man having a well developed memory of this higher class.

The constructive imagination is really an active phase of the higher memory. The memory reproduces the associated ideas it has had stored away. These are held in consciousness by an act of will. And, the inventive faculties proceed to form new combinations, improvements, changes, etc., until finally a new composite idea or image is formed, which then passes into the memory as a newly discovered or experienced fact. Instead of being impressed originally from the outside, the new image is built up to previously impressed facts, and then re-impressed as a whole. The impressions of the original bricks are built up into a new mental structure, and the latter is impressed on the memory by a distinct

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act of the will—but from the inside instead of from the outside.

Concluding the consideration of this particular phase of the philosophy of memory, I ask you to consider the following words of Cunningham, who repeats the ideas which have been held by all the great authorities from the days of Aristotle: "Imagination is just a form of memory. In all of our imaginings we are simply remembering—remembering not methodically but loosely—not according to old collocations and contiguities alone, but also according to the laws of resemblance and contrast. But still it is memory: memory furnishes the whole weft and woof for every web, however brilliant the coloring which imagination weaves."

I ask you also to consider the clear summing up by Kay of the distinction between the operations of the two general classes of memory, as follows: "While vulgar minds are held in thraldom to the order and circumstances in which their perceptions were originally obtained, and can only reproduce them in the same manner, the cultivated mind sees the end from the beginning, and arranges his materials in the way best calculated to bring out the end he has in view, passing over, it may be, a number of details that are not essential to his purpose."

## LESSON V.

## WONDERFUL INSTANCES.

In the history of the study of memory, the various writers and teachers, particularly the earlier ones, are found to have expended much time, labor and pains in the gathering together of well known instances of individuals who have possessed memories far above the normal. Ancient history contains many celebrated examples of this kind, and the various authorities on the subject have added many as remarkable cases to the list.

I have thought it well to direct your attention to some of the more celebrated cases of this kind, in the course of these lessons. But I wish to be distinctly understood as presenting these solely for the purpose of informing the student of the wonderful possibilities of the memory under favorable conditions. I have no desire to hold up these cases as examples to be followed by the student. In fact, I earnestly advise the student to refrain from attempting to duplicate these unusual feats. Except in a few cases, it will be found that these individuals have been out of the normal class—many of them undoubtedly coming under the category of "freaks." I wish my student to avoid all freak tendencies. I wish to develop them in all-around memory power, and not in any lop-sided fashion.

But, as it has been well said, extreme cases are often necessary to point out the normal. And, so, it may be well to let these extreme cases mark one limit, the other being represented by those individuals of your acquaintance who seem to find it difficult to remember even the most common events of their daily experience. Having marked out the two extremes, then find the normal point between them, and "keep in the middle of the road" as the old song teaches.

In the following instances, you will find all classes of memory represented by examples of extreme development—so extreme, in fact, that in many cases one often may be inclined to doubt the correctness of the story. But each case has been carefully selected from the records of reliable authorities, and there is no reason to doubt the good faith of the recorders, making, of course, the usual allowance for the natural tendency of stories of this kind to gather additions in their course of travel. They come to us as do the other instances of history, through various channels, and often having been repeated by one person to another before they were finally recorded by some writer. The thoughtful student will read between the lines of these cases, and will pick up many an indicated point of practice which he may turn to good account in his own case. I have found this to be the case with many of my personal students, at least.

Locke makes the following remarkable statement about the celebrated Pascal: "Till the decay

of his health had impaired his memory, he forgot nothing of what he had done, read, or thought in any part of his natural age." Hamilton makes the following similar statement, including Grotius: "Grotius and Pascal forgot nothing they had ever read or thought." Cardinal Mezzofanti is declared to have had a perfect acquaintance with over one hundred languages, or variations of languages, and was proud of claiming that he never forgot a word that he had once learned, but his wonderful ability seems to have been confined to this one particular field of memory, rather than having been general as was the case with Grotius and Pascal.

Leyden had a wonderful memory along several lines. It is related of him that after he had gone to Calcutta a case arose in which the exact words of a certain Act of Parliament came into question. No copy of the Act being found, Leyden undertook to repeat it from memory, he having carefully studied it while in London. His transcript was so perfect, that when a printed copy was forwarded from England, some time afterward, it was found to be identical, word for word with Leyden's dictated copy. Abercrombie, writing of Leyden, says: "I am informed through a gentleman who was intimately acquainted with him, that he could repeat correctly a long act of parliament, or any similar document after having once read it."

Galton mentions a Unitarian minister named Bidder, who had an extraordinary memory for

Biblical texts, and who is said to have been able to give chapter and verse of almost any passage in the Bible; or, on having chapter and verse mentioned to him, he could repeat the passage itself. Dr. Porson had a remarkable memory for books which he had read. It is related of him that on one occasion he called on a friend whom he found reading Thucydides. His friend asked him the meaning of some word, and Porson immediately repeated the context. When asked how he knew the particular passage that his friend had been reading, Porson replied: "Because the word occurs only twice in Thucydides; once on the right-hand page in the edition which you are using, and once on the left. I observed on which side you looked, and accordingly I knew to which passage you referred."

We find countless instances recorded of the wonderful feats of the celebrated chess players, of the last century and the present, in which they, being blindfolded are able to play a large number of games simultaneously, remembering perfectly the position of the men on the numerous boards, from time to time, during the progress of the games. It is said of these men that they picture each board in their memory, and keep the changing positions of the chessmen clearly in memory as each board is brought in succession into the conscious field. There are many instances of persons, skilled card players, who can remember each card in the order in which it is played, and who can, from memory de-

scribe correctly each stage of the game afterwards. Akin to this is the feat often seen, in which the card player repeats correctly the exact order in which a full pack has been dealt out before him. It is no uncommon thing among chess players to hear a game described, move after move, long after the close of the game. Pages could be filled with recorded instances of this kind. The same remarkable feats of this class are related of celebrated players of almost any well known game in which the concentrated attention of the player is obtained. The principle is the same in all of such cases.

Kay relates an interesting story of Dr. Moffat, the distinguished missionary, as follows: "After preaching a long sermon to a number of African savages he saw at a distance a simple-looking young man holding forth to a number of people who were all attention. On approaching, he found to his surprise that the young savage was preaching his sermon over again, with uncommon precision and with great solemnity, imitating as nearly as he could the manner and gestures of the original." This, of course was an instance of a high degree of parrot-memory, being merely a remarkable reproduction of a series of sounds and movements, without any attempt to grasp the meaning of the words, or the ideas sought to be conveyed. The feat is remarkable enough, but it should be placed in the proper category.

A number of the authorities cite the well-known instance of a celebrated composer, who when a mere lad listened to the rendition of a magnificent Mass in a monastery. The monks never allowed the score to leave their own hands, and guarded it jealously from all other musicians, though frequently besought to give it to the world. The lad had such a wonderfully developed memory for music, and such a sensitive musical ear, that upon his return to his room he reproduced the entire Mass to paper, making not a single mistake in the entire score. Note for note the entire Mass was reproduced with absolute correctness. It is gratifying to learn that the monks were so impressed by the feat that they forgave the theft. The history of music gives us a number of similar instances in which page after page of difficult musical numbers have been reproduced after but a single hearing. In one's wonder at the unusual power of retention and reproduction, one must not forget the equally wonderful sensitiveness to impression, and the sustained concentrated interest and attention on the part of the hearers, which were necessary to make the original records.

An interesting example of the development of memory along certain lines, though commonly overlooked, is that of every educated Chinese, for he must remember thousands of arbitrary symbols of words which take the place of an alphabet. Remember, we have only twenty-six characters to remember in our alphabet, our list

of many thousands of words being merely a series of combinations of these twenty-six characters. But the Chinese have no alphabet, each word being indicated by a different arbitrary symbol which must be carefully impressed upon the memory in order to be understood and read. The name and symbol must be linked together in the mind, in order to make writing or reading possible. And yet the simple schoolboy of China is able to read and write many thousands of words in this way, while the educated man of that country must multiply the schoolboy's list by a large figure. Imagine a Western child or man doing this wonderful thing. And yet it is possible to any one, providing he begins at an early age and adds new symbols each day, as does the Chinaman. It is interesting to note that the young children in our Western schools are now being taught, in a degree at least, to read in a similar way, that is to say by the shape of the word, rather than by spelling out the word in the old way.

The early training of the memory of the Chinese and Japanese, made necessary by the absence of an alphabet, has given these people wonderful memories along crtain lines. It is no uncommon thing for Chinese or Japanese priests to recite volume after volume of their sacred books. A Chinese who cannot recite the Teachings of Confucius from memory is regarded as lacking in education—almost illiterate, in fact. A celebrated Japanese historian, Hirata Atsu-

tane, is said to have compiled his great work on the myths and legends of his country, consisting of numerous volumes, without referring to a single book from which he had drawn his information originally. In other words, he had impressed upon his memory all that he had read on the subject for many years, and then was able to reproduce the same, faithfully and accurately, giving not only the stories but also their source and his authority for using them.

This history of China relates that over two thousand years ago, a certain Emperor of that country became jealous of the glory of the rulers who had preceded him, and of the history and achievements of their reigns. He became filled with a desire that everything in his country should date back to his reign. He wished to wipe out the slate of history, and begin all over. And, in accordance with this wish he promulgated a decree that every written or graven record in the kingdom should be immediately destroyed. All historical, religious and philosophical works were burned or otherwise destroyed. Even the work of Confucius shared the common fate. The result is that the history of China preceding that date exists today only in the shape of tradition, but even these traditions are very full of detail. The philosophies and religious teachings however, having been committed to memory by the learned men of the empire, were reproduced from memory, after the death of the emperor, and exist today in their original

form so far as known. The work of reproducing the entire works of Confucius was by common consent placed in the hands of an eminent sage, noted as an authority on the Confucian teachings. The old man is said to have reproduced, entirely from memory, the entire body of the Confucian teaching as it exists today. It is told that long years afterward, an important volume of Confucius' teaching was discovered in an old monastery, having escaped the destroying fire. When compared with the reproduced version of the old sage, it was discovered that the old man had not missed a single word—his memory was absolutely perfect.

The great epic poems of the ancient Greeks were transmitted from teacher to scholar in this way, for many generations. The sagas of the Norsemen were carried along in the same way. It is taught that the religious philosophies of ancient India and Persia were transmitted from sage to disciple entirely by word of mouth, and the memories of generations of pupils carried the precious words. It is difficult to realize that almost the entire body of the ancient histories and philosophies existed for centuries before writing was employed—the memory taking the place of parchment and graven stone. In fact, the inner teachings of many of the ancient religions and philosophies are said to have never been committed to writing or print, and even to this day are transmitted to the chosen few solely by the mouth-to-ear method. Judging from the facts

of the past, there is no reason to doubt this last statement, so far as the Oriental countries are concerned. Only the exoteric teachings exist in printed form, it is claimed by good authorities—the exoteric is imprinted only on the minds of the devout and loyal devotees in the temples, who are sworn to silence, except to the few chosen disciples.

## LESSON VI.

## MARVELOUS MEMORIES.

Max Muller, the great authority on Oriental philosophy, states positively that Panini's Sanscrit Grammar, with its voluminous text and its extensive glossary, fully equal to our Bible in the number of its words, was handed down orally from teacher to student for several centuries, before it was ever committed to writing. As we have already seen, the earlier Vedas and other Hindu scriptures were handed down in the same way during a corresponding period of time. Even to this day there are thousands of devout Hindu students who are able to recite correctly the principal Vedas from beginning to end, which feat is about equivalent to reciting the New Testament from memory. There are well authenticated cases of living Brahmins, who are able to recite from memory, with absolute correctness, the entire epic poem, or series of poems, entitled the **Mahabarata,** which consists of over 300,000 verses or slokas. It has been claimed that if the entire collection of Hindu sacred literature were to be destroyed over night, there are thousands of Hindus who could restore it from memory as fast as the words could be written down.

Writers on the subject of Hebrew literature state that the Kabala, or Sacred Teaching, of the Jews, were preserved for many centuries solely

in the memory of the priests and scribes, and were reduced to writing only at a comparatively late date in history. The legends regarding the ancient Druids state that their secret doctrines were transmitted in this way only, and were never reduced to writing, the consequence being that when the priests were killed or driven out of their countries the teachings gradually disappeared. The Slavonian minstrels, or singers of historical ballads, have always been noted for their ability to carry in their memories immensely long epic poems, etc., and this is said to be true of even the present day. The ancient laws of Iceland, as well as the history of that land, were not printed or written, but were memorized by the judges and lawyers of that land and period. The legends inform us that not only were the lawyers and judges able to carry the entire body of their law in this way, but were also able to memorize the innumerable number of precedents, decisions, etc., which gathered around the law itself. To be a lawyer in that day and land was somewhat more difficult than to fill the same office today in our lands.

Charles G. Leland, the author, who was not only an authority on the subject of memory, but was also the possessor of a wonderfully well stocked memory of his own, says: "The Algonquin Indians, I have found, are able to commit accurately to memory, word for word, their sagas or mythic legends, the length of which are practically interminable." The same authority

says: "I have heard of a lady in England, of about ninety years of age, whose memory was marvellous, and of which innumerable instances are related by her friends. She attributed it to the fact that when young she had been made to learn a verse of the Bible every day, then to constantly review it. As her memory improved, she learned more, the result being that in the end she could repeat from memory any verse or chapter called for in the whole Scripture." Leland also tells the tale of a young Hindu who did not understand English at all, but whose ear-memory was so highly developed that, after having fifty lines of "Paradise Lost" read to him, was able to repeat it word for word, accurately and then as a finishing touch, he recited the whole thing backwards.

History informs us that Seneca was able to repeat two thousand disconnected words after having heard them once, in precisely the same order in which they had been given to him. Porteus Latio is said to have never forgotten any of the speeches he had ever delivered, and was able to recite any of them word for word. King Pyrrhus once sent an ambassador to the Romans, whose name was Cyneas. It is related on this man that he learned the names of the entire senate and leading citizens of Rome, in a single day, and was thereafter able to call each man by his right name.

Pliny states that Cyrus was able to call by name every soldier in his army. Themistocles

called by name each of the 30,000 citizens of Athens. Luarez could recite all of the works of St. Augustine, giving perfect quotations, and citing page and line. Muretus tells an interesting story of a young Corsican pupil who could repeat backward and forward over 35,000 unconnected words, after once hearing them read to him. The writer says that the youth could have done still better, had not the readers become exhausted. Scaliger is said to have committed to memory the Iliad and Odyssey, in less than one month's time. He is said to have also committed to memory the entire works of the Greek poets in less than three months.

An interesting instance is that of Magliabechi, the celebrated bibliophile of Florence, who is believed to have had one of the best memories for books ever recorded. It is told of him that he knew the location, shelf, and number of every book in not only his own great library, but also in every other great library in the world. A well known tale concerning him states that once when the Grand Duke of Tuscany asked him a question regarding a very rare book, Magliabechi replied: "There is now only one copy in existence, and that is in the library of the Grand Seignior, in Constantinople, on the seventh shelf of the third case to the right, as you enter." The sequel is that upon investigation the book was found at this particular place.

Hortensius, the Roman orator, was possessed of a most remarkable memory. He is said to

have once attended an auction sale, which extended over a whole day, and then, on a wager, he recited the details of each sale, in the proper order, giving name of article, name of purchaser, and price paid. Seneca is said to have been able to memorize several thousand proper names, and then to recite them in their proper order, or even backward. At one time he is said to have had several hundred persons each recite a verse to him, whereupon, when they had finished, he repeated correctly the entire series, in proper order, giving the name of each person who had recited each particular verse.

It is stated on the authority of Eusebius that when the Chaldeans destroyed the manuscripts of the Hebrew Scriptures, Esdras repeated them word for word, from memory, so that the scribes were able to reproduce them. Bishop Saunderson is said to have been able to recite from memory, nearly all of the works of Juvenal and Perseus, all of Tully, and all of Horace. Fedosova, a Russian peasant, is said to have been able to repeat over 25,000 poems, folk-songs, legends, fairy-tales, war legends, etc., even after she was seventy years of age. One of the authorities cites the instance of a man in New York named Clark, who was able to state correctly the exact presidential vote of each State in the American Union, at every election from the first up to the present time. He also gave the population of every town in the world, ancient or modern providing that there was a record of the same. He is said to

have at his command the entire works of Shakespeare, which he could recite, beginning at a given point.

There have been several public performers who were able to repeat the exact population of any town in the world, exceeding 5,000 inhabitants; thousands of dates, names of personages in history, etc. In the case of one of the best known of these performers, an Englishman, it was estimated that the information of this kind he had at his command would require a goodly sized reference book to contain in ordinary type.

A number of the authorities cite the case of a Dutchman, name unrecorded, who is said to have been able to pick up a current newspaper, read it through, including market reports and advertisements, and then to recite correctly what he had read, word for word, from start to finish. It is a pity that this case has not been more intelligently recorded and verified, for it ranks with the best instances in point of accomplishment, if true. Whether true or not, it is matched by the celebrated case of Lyon, the English actor, who is said to have frequently repeated this feat, on a wager, including not only the market reports, and proceedings of Parliment, but also the railroad time-tables. One authority mentions the case of an English waiter who could memorize the contents of an eight-page paper.

A number of good authorities mention the case of a child, of abnormal brain development, who could repeat the entire Bible; two hundred

hymns; five thousand Latin words; a great amount of ecclesiastical history, theory, dogmas, arguments, etc., and an almost encyclopaedic quantity of ecclesiastical literature. In fact, the mind of this child seemed to be practically a plastic phonographic record, which easily took the impression of every word read to it, and easily reproduced the same. The child seemed to be abnormal—a "freak"—without any special intellectual development, and it died at an early age.

Fuller relates the following interesting case attributing it to Seneca: "A certain author had written a poem of considerable length, and, as was the custom of the time, read it in public, the assemblage being a very large one. On the reading being concluded, a man stood up in the audience and denounced the author as a plagiarist, claiming that he, himself, had written the poem, in proof of which he offered to recite it from beginning to end. The audience with one voice demanded that he substantiate his claim, whereupon he recited the poem all the way through, without an error, and defied the author to do the same; which the latter, to his extreme mortification, was unable to do, and the audience promptly decided that the man who had recited the poem from memory must be the true author. On the verdict being declared, however, the man frankly stated that he had really never heard the poem before, but had committed it to memory while the author was reading it. But in spite of this admission, he received even greater honor

for his wonderful memory than did the author for his talent in writing the poem."

Fuller also recites the following most interesting modern case: "One of the most marvelous feats of recent times was performed in August, 1897, at Sondrio, capital of the Valtellina district in the northern part of Italy, by Signor Edoe, professor in the Institution di Lorenzo, who on a wager, repeated from memory, and without making a single mistake, the whole of Dante's immortal poem, 'Divina Commedia,' which consists of nearly one hundred cantos, an amount of matter about equal to the number of words contained in the New Testament. The feat occupied about twenty-four hours in its accomplishment, lasting from 6 p. m. on one day until 2 p. m. the following day. It was achieved in the presence of a committee of associate professors and literary men, who, at about midnight, divided into two parties, alternately sleeping and listening until the recitation was finished, the text being carefully followed by the prompters during the whole time, all in order that there might be no question as to the genuineness of the performance. This feat was accomplished after a preparation that was comparatively short, considering the great length of the poem, and is perhaps the most wonderful exhibition of verbal recollection in recent times—which goes to show that, with all its defects, this commercial age of ours is able to, at least now and then, produce its masters in the great art of memory."

And so the stories go. A large sized volume could easily be filled with similar examples and instances recited by the writers on the subject of the history of mnemonics. But, as I have already said, these cases represent the extreme of memory training rather than the normal mean sought to be developed in the student. In some cases there is an almost abnormal development, while in others it is seen that the power is practically of the mechanical, parrot-memory type, rather than the exhibition of true memory culture and training. To the scientific investigator these cases are of extreme interest, though they may have but little real practical value to the teacher or student of scientific memory culture and training. The weakness apparent in the great number of these abnormal cases, is that these prodigies, while able to perform these spectacular feats show but comparatively little ability to use their gifts in a practical, common-sense way. Their memories have only a fictitious value in this matter of fact, practical age, and lack real value in the direction of practical Efficiency and creative work. Again, I ask my students to carry in mind this distinction, so as to avoid attaching false values. Let us ever remember that Efficiency rather than Sensationalism is the ideal, aim, and goal of all true teachers and students of Memory.

## LESSON VII.

## THE POWER OF ATTENTION.

All true teachers of memory impress upon their students the vital importance of the faculty of attention in the processes of memory. Without attention there can be no impression made upon the records of the mind; and without such impressions there will be nothing to be recorded and reproduced. Without attention, the memory would be like a phonograph without a needle or recording point. In such case the phonograph would receive no impressions upon its recording cylinder, and, consequently, there would be nothing to be reproduced afterward. Everyone who has used a phonograph is quite aware of the importance of having a sharp, clean needle, and it will be well for the student to carry the idea of the needle in his mind, in order to picture the work of the attention in the mechanism of memory.

Attention is one of the most wonderful of the faculties or qualities of the mind. The more it is studied, the more wonderful does it seem. It is closely allied with that other wonderful manifestation of the mind, which we know as the will. In fact, attention is said to be one of the most marked manifestations of will; and will is active principle in attention. It is impossible to manifest attention without the activity of the will, consciously or unconsciously applied. And, like-

wise it is impossible for the will to operate without the employment of attention. This close relation between the will and attention is not generally recognized, but the very best psychologists fully realize it, and interest in the subject is on the increase.

Attention really is not a separate faculty of the mind, any more than is memory. Like memory, it is connected with all mental states, and all faculties. Also, like memory, it is a peculiar form of mental activity, rather than a separate faculty in itself. Moreover, the power of attention is closely bound up in the phenomena of what we know as consciousness. Just what consciousness is no man knows, but every man knows the experience to which we apply the term. But whatever else consciousness may be, it is certain that it is something closely bound up with attention.

Some very good psychologists have held that the work of the attention is principally employed in the direction of narrowing or limiting the field of consciousness, rather than in increasing or expanding consciousness. In other words, that its action is intensive, in the direction of focusing, or concentrating, the power of consciousness upon a single thing or series of things, and, consequently shutting out of consciousness many other things; rather than in the direction of increasing or magnifying the power of consciousness itself. A close study of the phenomena of consciousness will serve to support this idea.

The highest degree of attention is secured only when the highest degree of concentration accompanies it. Concentration, of course, is the bringing to a centre of the mental powers of perception. In fact, it is very difficult to distinguish between the action of attention and that of concentration. Attention implies concentration; and concentration implies attention. It would seem that the two are but different sides of the same thing, and that the thing itself is a form of will action.

Psychology teaches that the power of concentrated attention bears a direct inverse ratio to the extension of the area of the attention. In plainer form, this means that the fewer objects we hold in consciousness, under attention, the greater is the power of our consciousness; the greater the number of objects so held, the less the power of consciousness. If our attention is concentrated upon a single small thing, our impressions regarding that thing will be found to be quite intense, vivid, sharp and clear. On the contrary if our attention is scattered among a number of things, our impressions will be much less clear, sharp, vivid and intense.

Sir William Hamilton, the eminent psychologist defines attention as: "Consciousness voluntarily applied under its law of limitations to some determinate object." He then proceeds to state that: "The greater the number of objects to which our consciousness is simultaneously extended, the smaller is the intensity with which it

is able to consider each, and consequently the less vivid and distinct will be the information it obtains of the several objects. When our interest in any particular object is excited, and when we wish to obtain all the knowledge concerning it in our power, it behooves us to limit our consideration to that object to the exclusion of others."

The above will be found to agree with the experience of every person. When the attention is not specially directed or concentrated upon any one thing, the person is more or less conscious of a number of impressions pouring in upon the mind through the channel of the senses. One sees a number of things, hears as many more, may receive impressions through taste and smell at the same time, and the sense of feeling may also manifest itself simultaneously. The attention may dance backward and forward, here and there, with great rapidity, and the consciousness may receive many impressions with more or less distinctness.

But let concentrated attention be given to any one thing, or set of things, and we find a far different state of affairs manifested. For instance a person concentrating his attention upon an interesting book, may fail to hear his name called by one of his family, or even to respond to a touch of the hand on the shoulder. He will not hear the doorbell ring, or the striking of the hour by the clock near by him. The enamored lover is often almost totally oblivious of the persons

and scenes around him, and recalls nothing of them afterward. His attention is concentrated keenly upon the loved one, and to the rest of the world of impressions he is practically in a trance. Nearly every one reading these words will find their proof in his or her own experience.

It is related that a well known philosopher was so busily occupied in writing one of his books, that he failed to hear the noise of the bombardment of the town by Napoleon's army; and became aware of the fact only when he was brought back to ordinary consciousness by a rough shake of the shoulder by a grenadier who had penetrated into the study of the scholar. It is a well known fact that persons intensely interest in some one subject, or sight, have failed to feel pin-pricks, or even more severe pain. A well known American orator once requested a friend in Congress to stop him after he had spoken two hours, but even the repeated pricking of his leg by a pin applied by his faithful friend failed to arouse him from his concentration in his speech. Soldiers in battle have failed to feel pain, owing to their attention being fixed on the object of the military movement in which they were engaged.

Workmen closely interested in their work, often fail to hear or see things which are occurring in their near vicinity. In the same way, one often falls into a reverie, or "brown study," in which the outside world is practically shut out. Criminals know that when a crowd is intently watching some interesting sight, the individuals com-

posing it are far less likely to detect the movements of the pickpocket. As a rule, the greater the degree of attention given to a special object, the less will be the consciousness of other, and unassociated, objects. And, of course, the less degree of attention given any special object, the greater will be the degree, and the variety, of conscious impressions from the general environment.

The act of concentrated attention also tends to magnify the power of the impressions received under it. If the attention be concentrated upon the ticking of a clock, or the dropping of water from a faucet, the sound will often become so intense as to be painful. A tiny itching of the skin will have a similar effect under the same circumstances. The buzzing of a mosquito may become maddening, unless the attention is fixed on something else. According to the same rule, it will be found that concentrated attention will develop the power of any sense to which it may be directed. In this way we manage to see small objects at a distance, which were at first invisible to us; or to hear sounds which at first were indistinct. The principle is akin to the principle of focus of the sun-glass. It causes the full power of consciousness to be brought to a focal point, by attention, and its power to be seemingly magnified in this way.

The power of attention varies among individuals. It may be greatly increased and developed by training and exercise, however. Many

instances of remarkable development along these lines have been noted in the history of applied psychology. Some eminent authorities have gone so far as to say that a highly developed attention was the key of that which we often call genius; or, at the least, enabled its fortunate possessor to duplicate many of the achievements of genius.

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It is conceded by the best psychologists that attention is a very high form of mental activity, and is found largely developed in the case of all men of great intellectual power. It is also noted that imbeciles, or persons of very weak intellect, have little or no power of voluntary concentrated attention, except possibly upon one or two lines, as, for instance, the cases of this kind mentioned in a preceding chapter on the parrot-memory.

The important part played by attention in the mechanism of memory may be appreciated when it is remembered that the first requisite of memory is that of acquiring clear impressions. The degree of remembrance depends materially upon the degree of clearness and strength of the original impressions recorded. And this clearness and strength depends upon the degree of attention accompanying the impression. An eminent psychologist has compared the act of attention to the action of the eye in sight. He held that an act of attention is as necessary to every exertion of consciousness, as a certain contraction of the pupil of the eye is to every exertion of the vision. The same great authority, Sir William Hamilton, added: "It is a law of the mind that the in-

tensity of the present consciousness determines the vivacity of the future memory. Memory and consciousness are thus in the direct ratio of each other. Therefore, vivid consciousness, long memory; faint consciousness, short memory; no consciousness, no memory."

An examination of individual cases will show you that even the persons of poorest memory will be apt to remember quite well the things toward which they feel the greatest interest. Interest is a great spur to the attention, in fact it is an axiom of psychology that: "Attention follows Interest." You will also discover that in the cases of the persons of even the best developed memory, there will be a tendency to forget those things which fail to interest them. The secret, of course, is that, interest being lacking, there is but little attention bestowed upon the original impression, and as a result the original impressions are much fainter than the average with the individual.

The secret then of obtaining clear, strong impressions depends materially upon the degree of interested attention given to the object producing the impression. This interest may be developed and cultivated to a remarkable degree. The child, or person of uncultivated intellect, is interested only in the passing, changing things of the moment. This is often called "involuntary attention," because it requires but little effort of the will, and is almost automatic in its mechanism. Voluntary attention, or attention directed

by a special act of will, on the other hand, is the mark of the trained intellect, and is the badge of developed efficiency in any line of human endeavor.

I shall have more to say regarding this matter of developing the attention as we proceed. For the present, it is necessary merely to indicate that the key is found in (1) interest, and (2) habit. Interest may be stimulated and developed, by a careful analysis and study of the thing in which interest is sought—even the most uninteresting thing becomes interesting when the mind is directed firmly to it, and its details and minor points are brought to view. Habit is the result of continued action along certain lines, and it is comparatively easy for one to build up a new habit. One may easily train himself in the direction of stimulating interest when required, and by so doing will train and develop the attention —and by so doing will, of course, develop the memory of the things in which the interest has been stimulated and developed.

## LESSON VIII.

## THE LAWS OF ATTENTION.

In the preceding lesson, we have seen that attention is really a focusing of consciousness, akin to the focusing of the rays of the sun by means of a sun-glass. In all focusing, there is a concentration or bringing to a central point of all the available force and power of the energy which is being concentrated, instead of a diffusion of scattering of the force and power of that energy. The law of increased power by means of concentration is found to be operative as well in the mental field as in the physical. Extensive consciousness takes in a wider range of objects, with a smaller knowledge of any particular object; while intensive consciousness takes in a narrower range of objects, with a greater knowledge of those objects, and a smaller knowledge of objects outside of the field of concentration.

But there is another phase of concentrated attention which must not be overlooked by the student in his consideration of the subject. I allude to the act of "retention" in consciousness, which is also a distinctive office of the power of attention. Not only must the object be concentrated upon in such a manner as to focus the entire power of consciousness upon it, and thus make a deep, clear impression upon the records of the mind, but it must also be retained in consciousness so as to enable the mind to thoroughly

examine and analyze it, and thus make repeated impressions upon the records. Each of these repeated impressions will tend to deepen the original impression, and thus not only make the understanding of the object more complete, but also render far easier its reproduction by the mechanism of memory.

The phase of detention in consciousness constitutes the important phase of that which is known as voluntary attention, which is the highest form of attention, and which is found highly developed in the case of men of trained powers of observation and thought. Voluntary attention is manifesed in but a slight degree by illiterate persons, and those lacking mental training. The lower form of attention is that which is known as involuntary, or reflex attention, in which the attention is easily attracted and as easily passes on to something else.

In involuntary, or reflex attention, the attention is caught by the outside stimulus, easily and almost without the conscious action of the will. It is this form of attention that we find in the case of the lower animals, children, and persons of untrained intellect. Wave a stick in front of a dog, or a ball of worsted before a young cat, and the attention is caught at once. In the same way, the attention of the child or adult of slight mental training is attracted by some trifling thing. Such form of mental action is almost automatic, and belongs to the class of reflex reactions of the nervous system, rather than to the class of vol-

untary actions of the mind. Attention of this kind is attended by but a minimum of concentration, and an even less degree of detention in consciousness.

In voluntary attention, on the other hand, a distinct and deliberate effort of the will is employed, both in the focusing and in the detention in consciousness of the impression. In involuntary attention there is no selection of the object on our part, it being presented from the outside world to our nervous system. But in voluntary attention, we make a deliberate selection of the object to which we wish our mind to attend. Again, in involuntary attention, there is no sense of effort; while in voluntary attention there is always a peculiar sense of effort, sometimes to a very marked degree. In involuntary attention, there is but a small degree of detention, and even the slightest new stimulus will draw away the attention from the first object. In voluntary attention, the will holds the attention to the object before it, and often closes the door of the mind to even marked stimulus from outside, as we have seen.

The majority of persons have scarcely progressed beyond the stage of involuntary attention, and often do not even seem to know what is meant by the process of voluntary attention. They say that it makes them tired to "think" about things—by which they mean it fatigues them to bestow voluntary attention even in a slight degree. The student, on the other hand—

whether he studies books or things—employs voluntary attention to a marked degree. In order to become acquainted with any thing or idea it is necessary to bestow upon it considerable concentrated voluntary attention—to "study" it, as it were. In this process, the object is treated with strong concentrated attention, and also is detained in consciousness sufficiently long to enable the perceptive faculties to analyze and examine it thoroughly, and thus to learn something about it. A writer on this subject truthfully says: "Training of the voluntary attention is the first step in mental development."

The importance of voluntary attention, in the general acquirement of knowledge, is as great as is its place in memory—in fact, the same principle underlies the two phases of the mind's operations, for the better we understand a thing the easier is it for us to remember it. Professor Kay says, on this subject: "The greater one's power of attention, the longer and more steadily he is able to fix it upon a subject, the better will he be able to follow out the same train of thought, and the greater will be the amount of success attending his labors. It is this power of attention, —this power of keeping a particular object before the mind till he has thoroughly mastered it, that more than anything else distinguishes the man of genius from others. Indeed, it is said that 'possibly the most comprehensive definition of genius is the power of concentrating and prolonging the attention upon any subject.' "

Sir Isaac Newton, when asked to describe his method of study, replied: "I keep the subject continually before me, and wait until the first dawning opens slowly by little and little into a clear light. * * * If I have made any improvements in the sciences it is owing more to patient attention than to any other talent." In the same general view, Carpenter said: "The more completely the mental energy can be brought into one focus, and all distracting objects excluded, the more powerful will be the volitional effort." And Brodie adds: "The mind that possesses this faculty in the greatest degree of perfection, will take cognizance of relations of which another mind has no conceptions."

Psychologists have disputed the point as to whether or not the attention can hold more than one object at a time in its focus. Some have claimed that it can hold but one thing in focus at a time, but that it can so rapidly pass from one thing to another that it gives the impression of having held several things in focus at the same time. Others have disputed this view, claiming that several things, often quite a number, may be focused at one time. The best opinion seems to be that if the objects be familiar, or simple, the attention can grasp several different objects at one time; whereas if the things are new and strange, or complex, the attention must be narrowed so as to include only that particular thing, and to exclude all other things.

A peculiar fact concerning attention is that,

under some circumstances, the attention may be more forcibly and completely focused upon a certain line of thought, or examination of an object, if there is also presented to consciousness some non-interesting, or monotonous, series of impressions which call for but a slight degree of voluntary attention. This would seem to be explained by the theory that the fringe of attention is occupied by the non-interesting impressions, and is therefore prevented from reaching out for things of more interest which might distract the attention from the main thing. This principle is illustrated by the familiar example of one being able to think clearly and forcibly, with a high degree of concentration, while listening (?) to a dull, uninteresting sermon or address. In the same way, some of the best analytical or constructive work has been performed while the worker has been surrounded by monotonous sounds, such as the whirring of machinery, the rumbling and buzzing of printing presses, etc. In such cases the wandering portion of the attention is caught and held involuntarily by the monotonous impressions, leaving the concentrated portion to be held by the voluntary attention without being tempted by more attractive and interesting outside stimuli.

Reuben Post Halleck, M. A. (Yale), in his well-known work on psychology gives the following important Laws of Attention, which agree with the best opinion of the day on this subject: "(1) Attention will not attach itself to

uninteresting things. (2) It will soon decline in vigor, (a) if the stimulus is unvarying, or (b) if some new attribute is not discovered in the object. (3) Attention cannot remain constant in the same direction for a long period, because (a) the nervous apparatus of the senses soon tire under the strain of continuous attention toward any one object, and consequently respond with less vigor; (b) the same is true of brain cells. To prove the truth of this, one has only to focus the eye continuously on one object, or to keep the attention fixed on the same phase of a subject. (4) When one kind of attention is exhausted, we may rest ourselves in two ways: (a) by giving ourselves up to the play of reflex attention, or (b) by directing our voluntary attention into a new channel. The amount of fatigue must determine which is better. (5) Attention too continuously centred upon the same unvarying sensation, or upon any unchanging object, has been proved by experiment to tend to induce either the hypnotic state or a comatose condition."

The secret of developing the power of voluntary attention consists in intelligent practice within the limits of the above stated general laws of attention, so that it is important that the above laws be understood and taken into account.

The first of the above laws state the difficulty of attaching the memory to uninteresting things. But there is a remedy for this, in (a) the equally true principle that interest may be developed in

a previously uninteresting object, by studying and analyzing it. Everything has its interesting side, and examination will bring this to light. By viewing a thing from varying viewpoints, and from different angles, new facts are discovered regarding it, and these discoveries awaken interest and renewed attention.

The same remedy applies in the case of the second law, for by changing the point of view, and by discovering new qualities, properties and attributes in a thing, the stimulus is varied and renewed interest obtained.

The third law explains why the attention cannot long remain focused in the same direction. A remedy for this will be found in the well-known psychological rule to study a thing by piecemeal. That is to say, instead of considering attentively the entire subject, or object, break it (mentally) into as many small sections as possible, and then proceed to study it by sections, one after another. This will vary the stimulus, increase interest, and widen the inquiry by reason of the analytical treatment. Remember that we learned the alphabet letter by letter, and not as a whole. This is not only easy on the attention, but is also the very best way to acquire a thorough knowledge of any subject or object.

The fourth law informs us that we may obtain rest for the tired attention by (a) relaxing the voluntary attention, and opening our consciousness to the impressions of involuntary or reflex attention—paying attention to the sights and

sounds from outside, as, for instance, closing our book and looking out of the window; or (b) by directing our voluntary attention into a new channel, as by closing one book and reading another along totally different lines; or by changing from an abstract subject to a concrete object, or vice versa. This is an important psychological principle—the best way to rest and relax the attention is to change its direction. Change of occupation gives the best kind of rest. Using one set of brain-cells tends to rest others.

The fifth law merely serves to emphasize the effect of unnatural concentration of attention, and the fact that a varying stimulus is necessary for continued consciousness. It serves to point us to the middle of the road, avoiding the extreme of undue concentration on a single object on the one hand, and the other extreme of bestowing no voluntary attention at all.

By acquainting himself with the general principles underlying the subject of attention, the student will be able to grasp more easily the many application of these principles as they appear in subsequent lessons.

## LESSON IX.

## THE GREAT SUBCONSCIOUS.

It formerly was a favorite comment of psychologists that all teaching, theories, systems of practice, etc., connected with the cultivation and training of memory, was but an amplification and enlargement upon the theory and practice of memory training in vogue among the ancient Grecians. Some went so far as to deny that modern psychology had added even a single original idea to the general subject. But we do not hear so much of this kind of comment within the past few years, for the newer knowledge regarding that great field of human mental activity—the great subconscious—has thrown an entirely new light on the subject of memory.

While it is true that the ancient Grecian teachers of memory-development originated some of the leading points in many of the memory systems which have been employed and taught since their times—and strongly emphasized the phase of memory by association, in particular—it is equally true that their theories regarding the nature of memory were crude and lacking in the matter of the rational explanation of phenomena. Some of the Oriental theories came much nearer to the real facts. But it has remained for modern psychology to discover the theory which fully explains the facts of memory. So new is this teaching regarding the subconscious field of

the mind, however, that some of the older teachers of psychology still adhere to the old theories, and find it difficult to adjust their conceptions to the newly discovered principles.

So revolutionary is the new teaching regarding the activities of the subconscious field of mental operations, that in my personal instruction on memory and its allied subjects I have insisted upon my students becoming thoroughly familiar with these new principles, in order that they might more intelligently apply the principles of my practical system. Based, as my system is, upon the laws and principles of the subconscious field of mental activity, it becomes highly important that the student should acquaint himself with all the salient points of the new teaching, before he attempts to put in practice the actual practical part of my system. The theory must be mastered before the principles of practice may be applied to the best advantage. I have thought it proper to follow the above mentioned course in this series of printed lessons, as well as in my private, personal classes. I ask that every student pay close attention to what I shall have to say regarding the workings of the great subconscious field of the mind. It will pay him to do so for the reasons above stated, and, moreover it is a fascinating subject, and one which will throw light upon many heretofore perplexing things regarding the operations of one's mind.

According to the old view, mind and the ordinary consciousness were identical—no consciousness, no mind; no mind, no consciousness. The phenomena of memory were thought to be explained by some reference to brain-tissue, matter, etc., the idea being that the mind passed on an impression to the brain matter, where in some marvelous way it was preserved, and later retransferred to the mind by the mechanism of memory. The records of memory were supposed to be passed entirely out of the field of mind, and on to the field of matter. All mind was supposed to be in the field of consciousness, and everything outside of that field was supposed to be entirely outside of the realm of mind. This was the old crude idea of the mind, and of memory. It was recognized as failing to intelligently account for the phenomena of memory, and many similar phases of mental activity, but, no better theory or explanation offering itself, it was generally accepted as correct.

But the increasing volume of observed facts, which seemed to indicate that a very large share of mental activity was performed by some field or plane of the mind under or above the ordinary field or plane of consciousness, began to compel the great thinkers and teachers of psychology to incline to the idea that there might be other fields or planes of mind, under or over, the ordinary field or plane of consciousness. This idea, once suggested and supported by eminent authority, sprung rapidly into favor, and as new facts were

discovered which agreed with the new theories, the subject was investigated still further, and so on, until today the new theory stands practically undisputed by any psychology worthy of the name, and is acknowledged as the best known explanation of the mechanism of memory, as well as affording the only explanation of many other important phases of mental activity.

Briefly stated, the best teaching of today holds that instead of the ordinary consciousness being all there is of mind, it really is but a very small (though highly important) field of the mind's work. The greater part of the mental activities of the individual is performed outside of this narrow field, and only its results are presented to the ordinary consciousness when called for. The ordinary field of consciousness has been well compared to the field of a microscope or telescope, which covers and takes in only that which is presented to it from the great area surrounding it. On the other planes of the mind, or other fields of its operations—use whichever term you prefer—are performed great quantities of mental work, classification, analysis, synthesis, adjustment, combination, etc. These subconscious planes or fields of mind may be said to grind, digest, and assimilate the facts impressed upon it through the medium of the senses, or ideas from the conscious field itself. And, moreover—and this is most important to us in these lessons—this subconscious plane or field of mind is the great record storehouse of the memory. In it

are contained all the records of past impressions, and from it everything that is remembered, recalled, or recollected must come to the conscious mind.

Your mind is a far greater thing than you have been considering it. It has depths and heights which you scarcely realize. It contains a much greater store of knowledge than you have imagined, because you have not known how to extract that knowledge from it. It is capable of performing the greater part of the drudgery of thought, outside of the plane of the ordinary consciousness, if you know how to set it to work. It contains a record, more or less clear and distinct, of whatever you have experienced during your lifetime. And, finally, all systems of memorizing must be based upon the principles which the subconscious mentality employs in storing away, indexing and cross-indexing its records. Any attempt to run contrary to its principles is doomed to failure, hence the ignominious collapse of so many apparently promising "memory systems," in past and present times. And, from the same reason, we find that many of the old principles of memorizing, those of the ancient Grecians for example, have persisted throughout the centuries—they were in accord with the subconscious laws, although formulated solely as the result of experience, and in ignorance of the real reason for their existence.

At this point, I wish clearly to assert my conviction regarding the nature of the subconscious

field of mind. There has been so much written about man's "dual mind," and about man having "two minds," etc., that much confusion regarding the subject has arisen. Personally, I hold, and I know that I have the very best support in my conviction, that there is no need for dragging in these theories regarding the duality of mind, or the idea that man has two minds, etc. The best thought on the subject is that instead of man having two or more minds, he really has but one mind (as the majority of persons have always felt to be the case), but that this one mind has many planes or fields of activity, of which the ordinary consciousness is but one, and a small one at that.

Strictly speaking, I will go still further, for I believe that in the so-called subconscious fields of mind there is manifested varying degrees and forms of consciousness. The subconscious mind is not unconscious, but really has forms and phases of consciousness peculiar to itself. The term subconscious implies merely that it is below the ordinary plane of consciousness—the term is inadequate, but is the best that offers itself, so we use it in place of coining a new one.

So, please, kind students, do not think that I as teaching the duality of mind. Mind is a great unit, of wonderful complexity. It is but one, at the last, but it has many, many sides—many more than two, I assure you. And when I speak of impressions, ideas, or records in and out of consciousness, I am not conveying the idea of

passing these mental images from one mind to another, but, rather, of passing them out and in the narrow field of ordinary consciousness, just as the inhabitants of a drop of water under the microscope pass in and out of its field, from time to time; or the stars pass in and out of the field of a stationary telescope, as the earth rotates. I have found, from actual experience with myself and in the cases of my students, that this very idea, held clearly in mind, is a positive aid in bringing things back into the conscious field by an act of will. When one understands the real workings of the subconscious machinery of memory, he is able to secure much better results from it. By so doing he is working in harmony with the laws, instead of against them.

Before passing on to consideration of the working of the subconscious planes of mind, and to its mechanism of memory, I would ask the student to consider the opinions of some eminent authorities on the subject, in order that he may fully appreciate the importance of these wonderful planes of mentality. Remember, however, that when I use quotations from other authorities I do so not to prove my own statement, or to bolster up any theories of my own. I employ them merely to illustrate my own principles, and, at times, to show the agreement of authority on important principles. It is well that the student should realize that the best psychology is not "a house divided against itself," but rather a firm harmonious structure built on the true scientific

principles, With this understanding, consider the following words of some great thinkers on the subject:

Lewes says: "The teaching of most modern psychologists is that consciousness forms but a small item in the total of psychical processes. Unconscious sensations, ideas, and judgments are made to play a great part in their explanations. It is very certain that in every conscious volition, the larger part of it is quite unconscious. It is equally certain that in every perception there are unconscious processes—there is a middle distance of sub-consciousness, and a background of unconsciousness."

Taine says: "Mental events imperceptible to consciousness are far more numerous than the others, and of the world which makes up our being we only perceive the highest points—the lighted up peaks of a continent whose lower levels remain in the shade. Outside a little luminous circle lies a large ring of twilight, and beyond this an indefinite night. But the events of this twilight, and this night, are as real as those within the luminous circle."

Maudsley says: "Examine closely, and without bias, the ordinary mental operations of daily life, and you will surely discover that consciousness has not one-tenth part of the functions therein which it is commonly assumed to have. In every conscious state there are at work conscious, subconscious, and infra-conscious energies, the last as indispensable as the first."

Halleck says: "It must not be supposed that the mind is at any time conscious of all its materials and powers. At any moment we are not conscious of a thousandth part of what we know. It is well that such is the case; for when we are studying a subject, or an object, we should not want all we know to rush into our minds at the same time. If they did so, our mental confusion would be indescribable. Between the perception and the recall, the treasures of memory, are metaphorically speaking, away from the eye of consciousness. How these facts are preserved, before they are recalled by the call of memory, consciousness can never tell us. An event may not be thought of for fifty years, and then it may suddenly appear in consciousness. As we grow older, the subconscious field increases. * * * Where are the images in memory when they are not present to consciousness? The theory is that the full-fledged idea is in the mind, but slumbering beneath the stream of consciousness just as a person is alive when sound asleep, without being aware of the fact. When we are not conscious of an idea, it is believed to disappear just as a diver does beneath the surface of the water; and the one is held to keep its form as intact as the other, during this disappearance."

I trust that my students "get the idea," as the American phrase expresses it.

## LESSON X.

## THE SUBCONSCIOUS REALMS.

The recent discovery, by modern psychology, of the great field of subconscious mental activity, has attracted the attention of both science and philosophy. It has been the missing link which now serves to weld together the hitherto loose ends of many facts regarding human personality and the powers of man. One of the principal points emphasized by this new understanding of the mind, is that man is much greater than he has thought himself—that the little conscious area that he has called the Self is but a tiny point on the great body of Self—that man has many powers and energies, available for his use and awaiting his call upon them. Some of the greatest minds of the day have expressed themselves forcibly regarding this great subject. It becomes the duty of every thinking, progressive man, striving toward increased efficiency, to acquaint himself with these new ideas, and to place himself in the new current of human thought.

Dr. Schofield, the eminent English scientist, has expressed this idea in the following beautiful words: "Our conscious mind, as compared with the unconscious mind, has been likened to the visible spectrum of the sun's rays, as compared to the invisible part which stretches indefinitely on either side. We know now that the chief part of heat comes from the ultra-red rays that

show no light; and the main part of the chemical changes in the vegetable world are the results of the ultra-violet rays at the other end of the spectrum, which are equally invisible to the eye, and are recognized only by their potent effects. Indeed, as these visible rays extend indefinitely on both sides of the visible spectrum, so we may say that the mind includes not only the visible or conscious part, and what we have called the subconscious, that which lies below the red line, but also the supra-conscious mind that lies at the other end—all those regions of higher soul and spirit life, of which we are at times, vaguely conscious, but which always exist, and link us on to eternal verities. on the one side, as surely as the subconscious mind links us to the body on the other."

This quotation naturally leads to the well-known statement of Sir Oliver Lodge, the celebrated scientific authority, of international fame and standing, in which he tells the world of thinkers to: "Imagine an iceberg glorying in its crisp solidity and sparkling pinnacles, resenting attention paid to its submerged self, or supporting region, or to the saline liquid out of which it arose, and into which in due course it will some day return. Or, reversing the metaphor, we may liken our present state of mind to that of the hull of a ship submerged in a dim ocean among strange monsters, propelled in a blind manner through space; proud, perhaps, of accumulating many barnacles of decoration; only recognizing

our destination by bumping against the dock-wall; and with no cognizance of the deck and cabins above us, or to the spars and sails—no thought of the sextant and compass, and the captain—no perception of the lookout on the mast—of the distant horizon. With no visions of objects far ahead—dangers to be avoided—destinations to be reached—other ships to be spoken to by means other than bodily contact—a region of sunshine and cloud, of space, of perception, and of intelligence utterly inaccessible below the water line."

The subconscious phases of the mind really perform a great part of our mental work for us. Many eminent scientists, philosophers, inventors, etc., have given us their testimony to this effect, though the experience of every man should be sufficient proof. Many of the best creative minds of the age tell us that their work may be said to consist of three general stages, as follows: (1) Earnest, concentrated examination and investigation of the available facts of the subject before them; (2) an attempt, usually unsuccessful, to arrive at general conclusions from these acquired facts; this followed by a longer or shorter period of seeming mental inactivity on the subject, in which the mind practically refuses to work on the problem; this followed by (3) a sudden flash into consciousness of the solution, more or less completely worked out in a manner certainly indicating subconscious mental processes and work. In some case the answer, solu-

tion, or missing idea, flashes into consciousness like lightning from a clear sky.

In some cases of this kind, eminent persons have stated that the answer came so unexpectedly that it almost seemed as if it had been superimposed upon the mind by some high authority. It is no wonder that the ancients believed that each man of genius has "genii" who supplied him with ideas in this wonderful manner. But modern science now knows that it is the man's own mind which does the work, though the work is performed on planes below the levels of consciousness. Further investigation reveals the fact that so far from this being the exception, it is a most common fact. Really, it is deemed probable that at least eighty per cent of the mental work is performed on the subconscious planes of the mind; and this includes some of the highest processes of reasoning.

That the above related mental phenomena belong to the same category of mental activity as do the phenomena of memory, is evidenced by the very familiar incident of one being unable to remember a certain fact, and then, after having been "given up," the missing idea will suddenly burst into consciousness, often bringing with it a train of associated ideas. Moreover, who of us is not familiar with the uncomfortable sensation of something which ought to be remembered—something to be done, said, or thought of. Conscious effort seems to bring no results in such cases, at times, and we are apt to give the thing

up in disgust, and to turn our consciousness to something else, when, all of a sudden, apropos of nothing whatsoever, the missing thought will flash into our conscious field, and all will be well. There is often a sense of mental and physical relief when this is accomplished, as if the brain has accomplished a bit of hard work.

In the same way, we often perform the primary work of a line of thought, in our conscious mind, and then lay the matter aside, either from weariness or else to attend to other work. After a time, sometimes quite a long time, we turn our attention again to the matter, and lo! we find that the subconscious mind has been at work on it, and that the intermediate steps have been taken, the result being that we have merely to add the finishing touches and polishing up work. Can any one question the fact that the subconscious work was as truly mental activity as was the conscious?

Oliver Wendell Holmes, the celebrated American writer, has well told us that: "There are thoughts that never emerge into consciousness, which yet make their influence felt among the perceptive mental currents, just as the unseen planets sway the movements of the known ones. I was told of a business man in Boston who had given up thinking of an important question as too much for him. But he continued so uneasy in his brain that he feared he was threatened with palsy. After some hours the natural solu-

tion of the question came to him, worked out, as he believed, in that troubled interval."

I think it very probable that the sense of having done wrong, and the feeling of regret that comes to us became of our having "left undone the things that we ought to have, and done those things which we ought not to have done," which we generally ascribe to "conscience" is really a phase of subconscious activity. That is to say, I do not deny the fact of "conscience"—for all have experienced its reproaches—but I believe that it has its seat and field of work in the great subconscious region of the mind.

Very few of us realize how much we are dependent upon the work of the subconscious-memory activities, in our ordinary work of thinking, deliberation, and consideration of a subject. Analyzing the processes of this mental work, we see that we first consider one idea or fact, and then, without any conscious effort on our part, an idea closely associated to the first one comes into our mind—from where? Then flows a steady stream of thought, fact following fact, idea treading close upon the heels of ideas. Where have these facts and ideas been stored? In the subconscious memory of course. What processes keep them flowing, when once started by the conscious attention? The subconscious processes, of course? Do you not see how closely the subject of memory and subconsciousness are related, and how important both of them are in the processes of thought?

## THE SUBCONSCIOUS REALMS

There is under way in the most of us a constant process of subconscious mental digestion and assimilation, of which we are quite unaware until time and circumstances bring into consciousness the work thereof. We have certain views and opinions regarding certain things. We listen to opposing views, ideas, and opinions, and they seem to make no conscious impression upon us. But, at some time we feel called upon to express our opinions on the said subjects, and, strange to say we find ourselves holding an entirely new view, often contrary to the former one. Though we were unaware of it, our subconscious mind took in the new ideas and arguments, views and opinions, and digested them carefully, assimilating the result in subconscious judgment, and surprising us with the completed result when we start to fix our attention on the subject. We are apt to say that our "feelings on the subject have changed," but it is more than a matter of "feeling"—it is a matter of changed opinion and judgment, thought arrived at subconsciously.

Even the old psychologists freely admitted that our feelings and emotion operate below the plane of consciousness, but they were loath to admit that any processes of logical thought were so performed. But modern psychology draws no such distinction. It recognizes the great work performed on subconscious planes in all mental operations, and all forms of mental activity, whether those of feeling, those of willing, or

those of thinking. Modern psychology recognizes the presence and power of subconscious feeling, subconscious will, and subconscious thought—in fact, it claims that the greater part of each and all of these three great classes of mental action is performed below the plane of the ordinary consciousness.

Some authorities who have given great thought to the subject, claim that the subconscious mind (as they call it) will reason with absolute logical sequence and accuracy from any premise strongly impressed upon it as a fact, and will bring the process to an absolutely logical conclusion if allowed to work without interference from the conscious mind. That is to say, the subconscious faculties will apply the strict rules of logical operations, to any premise so presented to them, under the proper conditions. The answer may not be true, but it will be technically correct, according to the laws of logic, providing the premise is assumed as correct. A false premise can produce only a false conclusion, of course. I mention this, in passing, merely for general information. I do not insist upon its correctness, in fact I think that the matter is still open to discussion, though the evidence, so far, seems to support the view advanced.

In imaginative work, the subconscious plays an unquestioned part. The representative faculties of imagination draw upon the subconscious mentality for their material, and their combination of memories into new groups. Many great

writers freely acknowledge their indebtedness to the subconscious work of their mentality. R. L. Stevenson, tells us that these faculties "do one-half of my work for me when I am fast asleep, and in all human likelihood do the rest for me as well, when I am wide awake and foolishly suppose that I am doing it for myself. I had long been wanting to write a book on man's double being. For two days I went about racking my brains for a plot of any sort, and on the second night I dreamed the scene of Dr. Jekyll and Mr. Hyde at the window; and a scene, afterward split in two, in which Hyde, pursued, took the powder and underwent the change in the presence of his pursuer."

Many writers, composers, and inventors, have received inspiration in their dreams, which they afterward put into material form with great effect. In the dream state, of course, the ordinary consciousness is entirely stilled by sleep, leaving the subconscious faculties full play if they choose to work out problems for their owner. In the same way, persons have arisen in their sleep, and have written wonderful poems, stories, legal opinions; worked out problems in mathematics; composed music, etc., all without any conscious realization of what they were doing. These are extreme cases, of course, but they serve to illustrate the activities of these wonderful planes of the human mind—the great subconscious mentality.

## LESSON XI.

## THE INFALLIBLE RECORDS.

One of the results of the recent investigation of the subconscious planes of mind, is the verification of the theory of some of the older schools of psychology which held that the memory really retains everything that has been impressed upon it during the entire life of the individual. The opposing school held that it was possible for the memory to "forget" absolutely a portion of what it had at one time stored away—that in some mysterious way the memory lost a part of its possessions. The fact that the individual found it practically impossible to recall, remember, or recollect certain impressions, was accepted as proof positive that the memory had actually **lost** them.

The other school held to the idea that the failure to recall, remember, or recollect certain impressions is due to some failure to set into operation the mechanism of memory, and that, theoretically, everything is possible of being recalled by memory, providing the proper method is found and applied. This view is sustained by the best modern authorities, in the light of the recent investigations of the psychology of the subconscious. Personally, I have always held and taught this idea, and, naturally am very much gratified to find myself sustained and verified by the new testimony which is being offered,

year after year, by the best psychologists of the world.

Not only is the theory more logical, when one considers the nature of the subconscious faculties, but it is borne out by countless facts, recorded not only in the most recent treatises on psychology, but also in the best of the works of the old authorities. These old psychologists had the facts well established and recorded, but they lacked the modern knowledge of the subconscious necessary to clinch their theories. I predict that within a generation, the fact of the infallibility of the subconscious memory will be accepted without question by every teacher and student of psychology, and that in the psychological laboratories of the world every effort will be made to perfect the methods of bringing the previously so-called "lost" impressions back into consciousness.

I fully expect that many of my favorite, and best established, methods, taught by me for the past twenty years, will be "discovered" (!) over and over again by the younger generation of teachers, and announced as something new and original, to a waiting world. Such is the fate of pioneer work along all lines. The new idea is at first laughed at, then sneered at, then disputed, then tacitly accepted, then announced as a new discovery under a new name by some younger teacher occupying a post of authority in some orthodox school. The new name is accepted as indicating a fresh discovery, and the original work of the pioneer is overlooked and forgotten.

But this must be accepted philosophically, for it is but human nature in action.

Some of the best modern psychologists have conducted interesting experiments in the direction of bringing to light in different individuals many apparently forgotten incidents of early childhood. It has been found that if a "loose end" of association be given the person—something connected with the period of his early childhood—he will be able to recall some little incident of that period, and then others, and so on until he is able to reconstruct a great part of the picture of his childhood days. I have conducted some very interesting experiments along this line, on my own account, in connection with my work of teaching. I have found that by taking a pupil to the scene of his early childhood life, he will recognize some building, street, river, etc., which will serve as the loose end of the ball of memory. From this point he will begin to recall little incidents associated with the scene. Names of long forgotten playmates will spring to his lips; personal appearances of these early companions will arise as pictures in the mind; names and characteristics of teachers will rise like ghosts from the past—even portions of lessons will flow into conscious recollection, without an effort.

A few years ago, I had the pleasure of conducting an experiment of this kind in the case of an American who came to me as a student. This man was over fifty years of age—fifty-three years, in fact. He had been born of American

parents while they were sojourning in France, where the father attended a medical school. The child was taken to America when about four years of age, and had retained absolutely no recollection of the French city in which the school was located, and in a suburb of which the family had resided. He could not speak the French language, and his pronunciation of the few French words he had since acquired was atrocious. I saw at once his great possibilities as a subject for experiment along the lines I have mentioned. I explained my wishes to him, and he expressed a willingness to be so used in the interest of science.

I began by taking him to the suburb in which he had lived as a child. He did not seem to recognize any of the scenes, which was no wonder for there had been many changes in the fifty years since he had witnessed them. Finally, however, he said that he found a dawning sense of recollection of an old chapel, and an old fountain near by. I asked him to restrain all conscious effort to remember anything connected with these objects, and to let his subconscious memory have full play. He did as I suggested, and before long he said that he remembered the name of his old French nurse, and had a clear mental picture of her appearance. When he went into details regarding these things, I was amused to discover that he pronounced the name of the old French nurse with a baby lisp, and with a quite pronounced provincial inflection, which, owing to his ignorance of the French tongue, was not apparent to him. Moreover, his description of the

dress of the nurse convinced me that she was a provincial of that particular period.

He then began to recall details of the play around the old fountain; the names of some of his playmates, and of an old black poodle who had accompanied one of his little companions. He also recalled visits with his nurse to the chapel, and some Latin words of the religious service therein. He even described the interior of the old chapel, which we found to be precisely correct. I kept him on the scene for nearly one week, and by that time he could repeat childish prayers, verses from songs, etc., all in provincial French, and with a baby lisp of which he was not conscious.

As we progressed, I found that his subconscious memory was reproducing details with an almost photographic degree of correctness, which was wonderful when the age at which the impressions were acquired was taken into consideration. His baby mind had evidently acted as a camera, taking unconscious pictures of scenes, persons, etc., without any conscious effort on his part. I regret that I was compelled to return to Paris sooner than I had expected, for I believe that had the experiment been continued we could have reproduced a very faithful picture of the neighborhood, as it existed in his childhood days. As it was, he remembered several buildings which had been torn down for many years—inquiry from old inhabitants verified his statements of location and appearance. I have had

many similar experiences in my work, and the instance given is merely typical.

Professor Kay says: "In somnambulism, dreams, hysteria, the delirium of fever, or on the approach of death, persons have been known to recall events of their past life, long since forgotten, and unable to be recalled under ordinary circumstances. Persons in a delirium of fever have been known to speak in a language which they had known from their childhood, but which for many years had passed from their memory: or to repeat with apparent accuracy discourses to which they had listened many years previously, but of which before the fever they had no recollection. They have ben known even to repeat accurately long passages from books in foreign tongues, of which they never had any understanding, and had no recollection of in health, but which they had casually heard recited many years before. The most remarkable cases, however, are those of persons who have been resuscitated from drowning or hanging, and who have reported that they had a sudden revelation of all the events of their past life, presented to them with the utmost minuteness and distinctness just before consciousness left them."

Beaufort, describing his sensations when drowning, said after his rescue: "Every incident of my former life seemed to glance across my recollection in a retrograde succession, not in mere outline, but the picture being filled with every minute and collateral picture, forming a kind of panoramic view of my entire existence,

each act of it being accompanied by a sense of right or wrong."

Dr. Benjamin Rush, the eminent American pioneer in medicine, has recorded that in cases of persons subject to derangement of mind, there is often a strange awakening of old memories, which had apparently been lost previous to their illness. Continuing, he says: "We hear them describe past events, and speak in ancient and modern languages, or repeat long and interesting passages from books, none of which, we are sure, they were capable of recollecting in the natural and healthy state of their minds. In these cases, and many similar to them, the activities of the ordinary plane of consciousness are impaired or distorted, which seemingly results in allowing the subconscious activities to manifest more freely and with less restraint." Interesting testimony, and a most wonderful conclusion, considering that it was written many years before the modern discovery of the principles of subconscious mental activity—it reads almost like a page from a modern book—a great genius was old Dr. Rush, one who lived a full generation, or two, before his real time.

Coleridge relates the following most interesting case, which well illustrates the principle of memory which we are considering: A young woman, a serving-maid, twenty-five years of age, in the town of Gottingen, in Germany, was seized with a nervous fever. In her periods of delirium she incessantly recited in Latin, Greek and Hebrew, using very pompous tones. She was quite

ignorant, and a knowledge of these ancient tongues was far beyond her experience. The natives thought that she was possessed of the devil. Her case attracted the attention of several celebrated medical men, and they began to investigate it. They took down the words she uttered, and reduced them to regulation writing. The sentences were found to be intelligible, and coherent, but having little or no connection with each other. Only a small portion of the Hebrew could be traced to the Bible—the balance seemed to be in the Rabbinical dialect.

After much trouble, her birthplace was located, and investigations made regarding her early life. It was discovered that her parents had died when she was but a small child, and that she had been taken in by a charitable clergyman, when she was about nine years of age. She remained with the old clergyman for several years. Inquiry among the surviving relatives of the old gentleman brought to light interesting facts which served as a key to unlock the mystery.

It was discovered that the old clergyman had a custom of walking up and down a passage in the house, into which the kitchen door opened, reading in a loud voice from his favorite books. He was a learned Hebraist, and a student of the Rabbinical writings, besides having an excellent library of the works of early Greek and Latin writers, in the original. A number of his books were in the possession of the relatives, and examination brought to light the identical passages which the ignorant serving-maid had recited in

her delirium, so many years afterward. And so the mystery was solved. In her ordinary condition of mind, this woman could not recall a single word of these foreign tongues.

These cases serve to show that the subconscious memory stores away and retains the impressions made upon it years before. Under ordinary conditions these impressions lie dormant and inactive; but under extraordinary conditions they are reproduced in consciousness. Therefore, modern psychology feels justified in asserting that if science could but find the key to unlock every secret door of the subconscious memory, each individual would be able to relate every incident of his life's experience, even to the smallest details.

The complete bunch of keys is missing, but we laborers in the field of psychological science feel that we have found many of them, which if used, will unlock many a door of memory. Memory culture consists in the systematical arranging of our subconscious records; in intelligently indexing them; and finally in acquiring improved mental mechanism for unlocking the doors and bringing to the light of consciousness that which lies behind them. The principle has been found —our work, and yours, lies in practically applying the same.

## LESSON XII.

## THE LAW OF ASSOCIATION.

All teachers and students of the subject of memory, its culture and training, both in its theoretical phases as well as its practical, realize and acknowledge the prominent part played in all memory processes by that wonderful principle in mental activity—that great psychological law—known as "Association of Ideas."

Mill goes so far as to claim the law of association of ideas is to all psychological processes practically what the law of gravitation is to astronomy, and the elementary properties of the tissues are to physiology. Stuart says that the connection between memory and the association of ideas is so striking that the whole of the phenomena of memory may be said to be resolved into the principle of association; and that it is evident that, without the associating principle, the power of retaining our thoughts, and of recognizing them when they occur to us, would be of little use. Ribot compares the law of association of ideas to the law of attraction in the physical world.

It is a recognized principle of psychology that the recollection of an impression or record in the mind becomes possible only when the impression is linked, or associated, with one or more other impressions or records. In fact, connected mental processes of any kind depend equally upon this principle of association, as, otherwise,

the "stream of thought," cannot flow. From this recognized principle has grown that great principle of memory, i. e., that the greater the number of associated impressions attached to an idea, the greater the probability of the recollection of that idea. Theoretically, if there were in your mind an idea absolutely detached from, and unassociated with, other ideas, then that idea would be forever lost to you, for no matter how strong the impression, you would never be able to pull a "loose end" of associated ideas and thus bring to consciousness the lost idea. Consequently, all efforts in the direction of memory training or culture must take into consideration this great principle of the mind—association.

In order that you may fully grasp the paramount importance of this principle of association of ideas, I ask that you take a general glance at the processes of thought, and thus perceive the ever present principle at work. The uninstructed person is accustomed to the idea that his thoughts come and go without regard to law or order, and by mere "chance." But, here as everywhere else in Nature, we learn to realize that there is no such thing as chance and that everything is under the rule of law and order. The most idle, fleeting thought comes wholly because of previous associated thoughts or ideas—without these preceding ideas it would not have come, and could not have come. The law of the order and sequence of ideas is as regular and invariable as is the law of gravitation, the rise and fall of the tides, the rotation of the planets. Though

we may not always be able to trace the associated ideas, we know that they must be there.

By this it is not meant that there is always a conscious precedent to an idea or thought. Rather, the greater part of the mental preceding ideas are below the plane of consciousness. But, as a rule, we can always find in consciousness a trace of the preceding current of thought which brought into consciousness the particular idea before us at the time. The recognition of this great law of psychology has brought that science into line with that of physics. We now realize that the mind, no less than the physical world, is under the influence of Law—that a universal law pervades everything, and that if we discover the natural principles we may take advantage of them and set them to work in our service.

Novelists, and dramatists, have taken advantage of this law of the mind, and have made their characters act in accordance therewith, the explanation being accepted by all readers or hearers as quite in accord with human experience. For instance, an old judge picks up a letter bearing the faint odor of mignonette, whereupon his memory carries him back in imagination to the scenes of the past, in which a certain fair lady played an important part. The missing link is supplied by the fact that the lady always used this particular kind of perfume. Or, again, the sound of a few bars of an old song, or other piece of music, will bring up thoughts and recollections of other scenes, persons, and incidents. Often a long train of thought is started in this way.

Poe makes one of his characters very expert in deducing the ideas in the mind of a person, by tracing up the train of association from a preceding remark, sight or sound. It is an interesting experiment for one to stop at some particular point in a long train of thought, and then, step by step, work his way backward along the line of thought. One, usually, is greatly surprised to discover what a far cry it is from the first idea to the last. Recognizing this principle, it is at once perceived how much broader is the thought of a person whose ideas have a wealth of associated ideas, as compared with one whose ideas have but few links of associated thought. As startling as it may appear, it is a fact that in this difference in degree of association of ideas, is found the secret of the difference between an educated man (in the true sense of the term) and an ignorant one.

The phenomena accompanying the manifestation of the psychological law of Suggestion (of which so much is heard in these days) are due largely to the operation of the principle of association of ideas. That is to say, it is found that a person generally associates certain facts with other facts and instinctively expects to find the second following the first. If a hypnotic subject is made to believe that a piece of wood is a piece of heated iron, his excited imagination will naturally cause him to feel the sensation of heat when the counterfeit hot iron is applied to his flesh. The idea of burnt flesh is associated with the idea of hot iron, in his mind, and he acts accordingly.

In the same way, the impostor assumes the garb of a preacher, or Quaker, knowing that people usually associate honesty and fair dealings with that garb.

Many a shallow individual has gone through life with a reputation for being wise, simply because he had the facial expression and appearance of a thoughtful person—the only chance of discovery being that he would talk too much and thus discover to others his ignorance. The quack and charlatan have as their stock in trade a grave, profound expression, and a habit of saying as little as possible on any subject of real importance—a few sweetened words, platitudes, and generalities, accompanied by a "thus saith the Lord!" expression, is generally sufficient to create and maintain the impression of great learning among the uninformed and ignorant. All students of suggestion realize the great suggestive effect of associated ideas; and alas! the rascals are quick to avail themselves of this knowledge of psychology.

There are a number of laws, and minor principles, connected with the general law or principle of the association of ideas. The student will do well to familiarize himself with the same, for by so doing he will be laying the basis of an intelligent application of the power in the perception and filing away of his memory records in the great subconscious storehouse. I invite your attention to these laws and principles, in the following classification and analysis:

THE TWO GREAT CLASSES OF ASSO-

CIATION. There are two great classes of association of ideas, viz: (1) association of contiguity; and (2) association of similarity. In the first class, that of association of contiguity, we find the ideas or impressions linked or connected with each other by reason of relation in time, space, etc. For instance, we remember an action as associated with the one which immediately preceded it, or followed it in time; or a thing as associated with the things adjoining it in space. Each impression is found to be one of a chain of this kind. We are able to reach one link by getting hold of another link in its associated chain. In the second class, that of association of similarity, the link is not that of sequence, but of resemblance to other things. In this class we find things of a kind gathered together in classes, subclasses, etc. We shall see this distinction more clearly as we proceed.

CONTIGUITY. The association of contiguity is more familiar to us than that of similarity —it is the more elementary form of association, and one that is manifested by the simplest and most uneducated mind. There are three forms of association of contiguity, as follows: (a) contiguity in time; (b) contiguity in space; and (c) contiguity in consciousness. Let us now consider these three forms.

CONTIGUITY IN TIME. In this form of association by contiguity, the impressions or ideas are linked in the order of their sequence in time. That is to say, our memories store them up in the same order in which they were origi-

nally perceived by us. For instance, we remember an occurrence in the detailed order of events which comprise it as a whole—we remember it in the order of the occurrence of its constituent parts. Suppose we recall the idea of an action which was witnessed by us at some time in the past. We find that our memory of the action begins with the first step or stage of that action, and then proceeds to consider the next, and so on until the end is reached—all very rapidly of course. In fact, we do not remember any action as a fixed, immovable picture, but rather as a rapidly moving picture, reproducing the details on the original action in the same order in which they happened. The memory, essentially a faculty of reproduction, is found to act as a mental moving picture machine, running its mental film before it, each picture on the film following the one which preceded it in the original action.

It is in this way that we remember so many familiar things, as for instance, the alphabet, multiplication tables, rhymes, etc. Our memory records the sounds reaching the mind through the ear, or the words reaching it through the reading eye, and then when we turn the machine the reel spins itself out and reproduces the series of original impressions in the same order in which they were received. This is the explanation of the comparative ease with which even the child may recall the words of a rhyme, the alphabet, etc. Give the starting "a," and "b, c, d, e, f, g" naturally follow. Interrupt the sequence, and the memory fails.

Many verses may be memorized and repeated in this way, but it is much more difficult to begin in the middle, or any other place than the beginning. If one wishes to remember a list of things to be bought at the shop, he will find it easier to make a regular list of them in his memory, like the letters in the alphabet. By repeating this list, mentally, several times the memory of the first will recall the others until the end is reached. Children and servants instinctively recognize this principle, and apply it in remembering messages and orders given them. This form of association is like a string of beads—memory will pull one bead after another from the string.

Psychology informs us that there is a very good reason for this ease in remembering things in regular sequence. It is not a matter of simple happening or chance, but rather the result of an established law of the mind. This law may be understood by reference to the following words of Ribot: "When we read or hear a sentence, for example, at the commencement of the fifth word something of the fourth word still remains. The end of the fourth word impinges on the beginning of the fifth." Instead of a series of actually separated minute pictures, our mental moving-picture film is found to be rather a series of minute pictures, not actually separated from each other, but rather blending into each other and forming a part of that which went before, and that which comes afterward.

Halleck points out this fact, by his illustration of the ignorant person on the witness stand,

who must tell his story in his own way, or else he is unable to express himself. He says of the man: "If, between two given events, he bought a barrel of flour on trust at a red grocery, one of his children was teething, or he blew his nose, he must relate the events in the order in which they occurred. Having never learned to think logically, he really has no other way of getting from the one event to the other, except by using everything that happened as a stepping stone wherewith to cross the intervening stream. Deny him the right of using a certain stone, and he stands puzzled in mid-stream." Every reader will recall some person who, always tells his stories in this way, with a plentiful sprinkling of "sez I," "sez he," and, many a side-trip into inconsequential by-paths of the tale. Listening to such a tale, told by such a person, we feel inclined to bid him, in the words of the slang of our American cousins, to "cut it out" of his mental film roll. An unscissored film results in a story long drawn out, stale and full of uninteresting details. Such cases serve to illustrate the psychological principle, however, and thus have their place and value.

## LESSON XIII.

## THE LAW OF ASSOCIATION (Continued).

CONTIGUITY IN SPACE. The second form of association of contiguity, is that of contiguity in space. In this case the link is that of position, rather than that of sequence or order in time. In this second form of contiguity, we link the impression of an object to the impression of the object immediately connected with it in position. For instance, if I recall the impression of my writing desk, it is very easy for me to proceed to recall the impression of the chair in front of it; from thence my memory travels to the rug under the desk and chair; thence to other chairs and rugs; thence to the decorations of the room, etc. Or, taking another turn, it may proceed from the desk to the objects upon it, the ink-stand, paper-weights, desk-clock, calendar, etc. In short, the memory acts as a mental eye, traveling over the impressions of space which it finds stored together within it. The secret, of course, is that it is simply reproducing the actual movements of the eye, in the original case.

The mechanism of the memory is especially adapted to recalling impressions stored away in this manner. You will find it very hard to remember and describe the contents of a room which you visited yesterday, if asked to do so, if you attempt to grasp the entire picture of the room at once. But, if you will begin by recalling some particular point or part of the room,

you will find your memory easily and naturally traveling from that point to another, and so on, until you will have reproduced a very fair picture of the room as a whole. As you proceed, in this way, you will be surprised to find how easily little details of the furnishing of the room, apparently unnoticed by you, will present themselves in consciousness. It is simply another form of getting hold of the "loose end" of memory.

In my personal classes I often ask a student to reproduce in detail the picture of some room, shop, or other place, which he has not visited for many years. Fixing upon the place, the student will usually complain that he has lost all recollection of it, and will be ready to give up the task in despair. But, I persist, and insist upon his finding a starting point. Frequently, if the place is a room in a house, I ask him to place himself in imagination at the door of the house—the front door, before it is opened to him. Then, I ask him to imagine the door as being opened to him. Then, he tries to form a mental picture of the hall. From this point, the task grows in interest. His face brightens up, and he begins to recite, with growing interest and confidence, the hall carpet, or tiles; the hall chairs, table, or other furniture, if any. Frequently he interrupts himself to describe the features and characteristics of the person who opened the door for him. Then he approaches the closed door of the room in question. Before this he could not have told you the color, wood, and general appearance of this door, had you offered him a reward of a hun-

dred francs. But now, started on his mental trip, he is able to give me all these details, and often, even to describe the lock and door-knob.

Then the student, in memory, enters the room. He sees the long-forgotten piano in the corner, then the old-fashioned marble-top table in the centre of the room, with the glass-covered vase of wax flowers reposing thereupon. Then he sees the marble mantelpiece, with its ornaments (!) spread over it. Then the old fashioned wall-paper, and the family portraits on the wall in their oval frames (he may recall the familiar picture on the easel, of that period, as well). Next come the haircloth chairs and "sofa," and the still older "what-not" in the corner, filled with odds and ends of the bric-a-brac of the period. Even the colors of the wallpaper, and the carpets and draperies are recalled, though a few moments before they had been apparently totally lost to memory. If the room has been the scene of some sentimental happening (and such are the scenes usually selected for the test by pupils of middle-age, at any rate) long forgotten memories of words, tones, perfumes, articles of dress and adornment, the flutter of eyelashes and the pouting of lips—ah! these memories were deeper than we had thought—all of these impressions will come into consciousness. The "loose end" of association being furnished, memory does the rest without much effort.

I once had a pupil, now a prominent retired merchant, who was able in this way to recall in detail the articles sold in the shop in which he

had worked as an apprentice nearly a half-century before. He admitted entire ignorance of these things, at first questioning, though he was able to form a dim picture of the exterior of the shop. I pressed him up, and insisted that he picture himself entering the door of the shop. He did so, and then began the interesting recital. He was able to visualize the various shelves and compartments, with their contents, and in many cases was able to state the prices of many articles of merchandise handled in the shop. So rapt did this successful man become, that he seemed lost in a dream, oblivious to the scene in the class room. He had been able to reach the subconscious records of his mind, and to discover and recognize that which he sought.

Again, I have been called upon to aid persons in remembering where they had placed certain papers, etc., which they reported as having been mislaid or lost. I proceeded precisely in the way just described. Bidding the person to cease "trying" to remember, I would lead him easily to the scene in which his last memory of the thing was placed. Dropping all mention of the article in question, I would ask him to describe from memory all the details of the room, the furniture, receptacles, decorations, etc. Then I would lead him to describe the adjoining rooms, and sometimes the entire house, shop, or office, as the case may be. As a rule, in the midst of some portion of the recital, he would exclaim, excitedly, "I have it! I placed it back of those books, for safe keeping!" or something of that kind. The association

of space-contiguity had awakened the association of time-contiguity—taking him from A to M, he was able to remember just what actions he had performed at M, which he could not remember from his memory of A. Do you get the principle?

There have been a number of ingenious memory systems offered the public which have been based upon this principle of association—contiguity in space. The pupil is instructed to place the things to be remembered, in an imaginary room—one thing in this corner, the next thing adjoining it, another thing in the centre, etc. While a somewhat clumsy method, and ill-adapted to the requirements of these times, these systems are not without interest, and are more or less efficacious. The student is advised to try them out for practice, and general development of memory of contiguity in space, and its associative power. Select a dozen things to be remembered, and then place them in their positions in an imaginary room—your own room, for that matter. Then, after visualizing them in that position several times, try to reproduce the scene from memory, traveling from one point to another in imagination. You will find that you can reproduce these placed things in much the same manner as you can your impressions of things actually occupying the space, but probably in a degree less clear and distinct. This method has its good points, but it has also its limitations.

In this connection, you may find it interesting to be informed as to the historical origin of these

systems. The tale is a true one, and very interesting in itself, not only as an incident of memory power, but also as illustrating an important principle. The scene of the story is laid in ancient Greece, about five hundred years before the Christian era. The hero of the story is one Simonides, a famed poet. The poet was invited to a great banquet given in honor of the victor in the Olympian Games. Several hundred persons were in attendance, including some of the greatest persons of the place. In the midst of the long feast, Simonides was called out by a messenger. Before his return, the supports of the ceiling gave way, and the heavy structure was dropped directly upon the guests in the banquet hall, crushing them to a pulp.

After the debris was removed, and the work of removing the bodies was commenced, it was discovered that it was impossible to identify the greater number of the bodies. There was great grief among the friends and relatives of the deceased persons, and much confusion resulting from the failure to identify the bodies for the purpose of religious services and burial. Simonides offered the services of his wonderful memory, as an aid to identification, which were gladly accepted, for his fame was great. He plunged himself into a state of mental concentration, until he was able to clearly visualize the banquet room picture as it had been impressed upon his mind while seated at the great table. Beginning at the point where his own vacant chair was found, he called out the name of the man who had been

seated at his right, then the next man, and so on all around both sides of the great series of tables. The men were all known to him in person, and his task was made easier on this account. The recorded story informs us that he was able to call off every name and place correctly, his work being verified by such of the bodies the features of which were recognizable. The grateful families were able to mourn over and then intern their dead without fear of mistaken identity. This tale is a matter of Grecian history.

The sequel is interesting. Simonides, and those who knew of his feat, were impressed with the idea of a plan of mnemonics, or memory system, based upon a large banquet room, and the poet soon perfected such a system. He is often referred to as the "Father of Mnemonics." His system was a simple one, being merely the mental picture of a large building, of many rooms, alcoves, corridors, etc. Each room, or place, had its appropriate name or number. This building and its divisions were thoroughly memorized, until the impression became indelibly impressed on the mind. Each room was then divided into squares, which were likewise memorized in the same way. The things to be remembered, were then identified with these rooms, and squares, by association of place in the memory, the process being made possible by repeated impression of the associated thing and place, simultaneously. For many years, this system, and its amplifications formed the basis of the numerous memory systems of ancient Greece and Rome.

Nor has the influence of this idea passed away. Even in modern times, we find its traces in many newly discovered (?) memory systems, which are often sold at a high price, and the purchasers bound to secrecy regarding the wonderful discovery and art! Its technical name, among students of mnemonics is the "Topical System." The entire history of the subject of memory is filled with interesting instances of the application of this Topical System to the work of memorizing names, things, etc. This principle may be employed to advantage in committing to memory short lists, etc., but in greater things it is cumbersome and unwieldly. It is found as hard to commit these systems to memory, and to associate them with the things to be remembered, as it is to commit them to verse and remember them in that way—another favorite device, by the way. But, as I have said, it has its place. Moreover, it "comes natural" for us to count off things on our fingers, in the work of memorizing them. A list of five, or ten things, may be easily memorized by associating each thing with one of the fingers. And so on—the student may work out many applications for himself.

I have found many pupils who were able to apply successfully a simple variation of this Topical System, aided by imaginative visualization, which I have taught for many years in my classes. Originally, I mentioned it merely as an interesting experiment for practice, but I soon discovered its possibilities in the case of students and others. It is very simple, and consists

merely in taking a list of articles to be remembered, and then visualizing them as arranged in a pile, stack, pyramid, etc. The memory easily recalls them in this form, where it may fail to do so with the items separated. This, particularly, where the "eye memory" is stronger than the "ear memory," which is often the case, though quite as often the latter is the stronger.

Here is an application: You are asked to purchase twelve different articles at a shop. You will possibly find it difficult to recall them with certainty, if you try to remember them without association. But if you will form the mental picture of the first article forming the base of a pile, the second article being placed above it, and so on to the end—and will impress this picture on the mind—you will be able to call over the list correctly when you arrive at the shop. If your ear memory is stronger, the repeated calling aloud the names of the articles will impress the list on your mind, as every child knows from experience. A combination of calling the names aloud, and the mental picture, is quite an improvement upon either separate method.

## LESSON XIV.

## THE LAW OF ASSOCIATION (Concluded).

CONTIGUITY IN CONSCIOUSNESS. The third class of association of contiguity is that which, for want of a better term, may be called contiguity in consciousness. By this term it is intended to designate the close association of two or more ideas which are considered in consciousness at the same time, there being no ordinary contiguity in time or in space. If, for instance, the student thinks of Napoleon, he will be very apt to have the thought of Josephine present itself to his consciousness. Likewise the thought of any of the leading figures of the French Revolution will have a tendency to awaken the recollection of certain other leaders.

But this is not merely because these characters lived at the same time—it is not the contiguity of time or space—the association is merely that of the previous frequent contemplation of the two in consciousness at the same time. As a proof of this, you will find that in many cases this form of association is between persons far removed in time and space, as, for instance, Napoleon, Caesar and Alexander. Nor is it the association of similarity, because in many cases there is no similarity between the two persons or things associated in this way. The secret is found in the fact that at some time in the past, the two things have been presented to consciousness at

the same time. Thereafter they are associated in the memory, by this form of associative link.

Thus, the Englishman is apt to associate the idea of holly and plum-pudding with that of Christmas, or the idea of a stuffed straw figure with that of Guy Fawkes; the American, the idea of turkey with Thanksgiving Day, or the idea of fireworks with the Fourth of July. Readers of Mother Goose always associate Jack with Jill; and the mention of Little Red Riding Hood will bring with it the picture of the wolf which so terrified the little girl. It is almost impossible to think of Scrooge without thinking of Marley; of Othello without the thought of Iago; of Portia without Shylock; of David Copperfield without Little Emily; of Uncle Tom without Eva; and so on.

In accordance with the same principle we associate the sound of the voice of a person with his features and personal appearance; the odor of a flower with the mention of its name; the idea of heat with that of August, or of cold with that of January. When we think of thunder, we usually think of lightning; of a stormy sea, the impression of nausea; of green apples, the idea of pain and abdominal distress. In short, ideas which have formed a part of the same mental state, of picture in consciousness, have a tendency to appear in consciousness, thereafter, linked by the old association. If they never have been so linked in consciousness, there is no such association, and there is no reason why the idea of one should ever recall that of the other, though

both be strongly impressed on the memory. Halleck, the American psychologist, states the entire principle in the following sentence, which I advise you to commit to memory: "Ideas and objects that have been before consciousness at the same time, and hence apperceived in the same mental state, tend afterwards to suggest each other."

In this connection, I wish to quote from the above mentioned American psychologist, who has the remarkable power of expressing the most profound psychological truths in the most simple terms, and of illustrating them in a charming manner. He says: "There are adults who dislike jelly because it was associated in their youthful days with medicine. We may once see a person in questionable company, and find that our minds thereafter associate him with that company. The law of contiguity is as far-reaching and as diverse in its operation as are our paths through life. * * * The principle of the association of ideas is sufficient to account for the change in fashions. A woman in a southern city had a bonnet that she particularly admired, until she one day saw three negresses wearing precisely the same pattern. She never again appeared in that bonnet. When a style of dress becomes 'common,' and is worn by the lower classes, it is discarded by the fashionable people. Fashions that are absolutely repulsive will often be adopted if they are introduced by popular or noted people. From his excesses, Henry VIII. became a bloated figure the latter part of his life,

and the aristocracy stuffed their clothing to imitate his size. Queen Elizabeth had auburn hair, and the ladies of fashion sought for a dye that would turn their hair to the aristocratic shade. Some of the ladies of fashion in a large European city selected on their own responsibility, without consulting the milliners, a cheap Manila hat, which was very handsome. The milliners found themselves with a high-priced stock for which there was no demand. They held a council, bought a large number of the cheap hats, and put them on the heads of all the female sweepers and scavengers in the town. When the ladies of fashion went out the next day, they were amazed to see the very dregs of the city arrayed in head gear like their own. It was not long before the result was what might have been expected."

Continuing, this writers says: "Few people stop to think how powerful with everyone is the association of ideas. Few would have any objection to dancing merrily on a plain rosewood board. Let that same board be cut up and put together in the form of a coffin, and no one with memories of a dead friend or relative would manifest merriment in its presence. The same rosewood board would be there, but not the same association of ideas. While visiting the New Orleans Exposition, a woman asked a friend to call her attention to any embroidery that he saw. His attention happened to be drawn to a white casket in the undertakers' exhibit. On the lid of the casket were some of the most exquisitely

embroidered flowers. Knowing her fondness for them, he called her. She came eagerly; but when she saw them on the lid of a coffin, she fairly ran away. * * * A business man was about to employ a young man for an important position, when one day the elder chanced to catch sight of him in questionable company. The law of contiguity henceforth brought up this company whenever the young man was thought of, and he failed to secure the position."

While these principles of psychology at first may seem to have no direct bearing on the subject of memory, I strongly impress upon the student the importance of a full understanding of the workings of this great law of association, for by so doing he will make for himself a mental tool by which he will be able to work many great changes in his machinery of memory; repair many defective parts; make many adjustments; tighten up many a loose screw or bolt; and, generally make of his memory-machine the perfect thing it was intended to be, instead of the wobbly machine which has been expending so much good energy in waste motion. There is no man who will not be greatly benefited in the matter of a more efficient memory, from the mere careful study of this one principle alone. It is a new subject to the majority of persons, but one which, when once clearly grasped, will suggest a thousand methods of application and use in everyday life and work.

An important rule regarding the linking together of two or more ideas by contiguity in con-

sciousness, I shall now present to you. It is based upon the ordinary natural process of involuntary association of this kind, and therefore is simply the conscious application of one of nature's subconscious processes. Here is the rule: **Endeavor always to bring the two ideas together in consciousness as clearly as possible, at the same time, and then weld them together by an exertion of the attention backed by the will. Strive to make the two ideas "meet at the edges" and thus become welded into one idea.**

Regarding the above rule, Pick well says: "We cannot too strongly insist upon the importance of completely isolating each couple of ideas at the moment of comparing them, and confining our attention solely to them." Kay, the English psychologist, says, on this subject: "As a general rule, the more closely the ideas that we wish to associate together are brought together in the mind, the more strongly will they cohere, and the greater will be their power of reproducing each other."

As I have pointed out to you in a preceding lesson, there are two great classes of the association of ideas, viz: (1) Association of Contiguity; and (2) Association of Similarity. We have considered the first, and presently shall proceed to the consideration of the second class. The same general principle of linking by association is still in operation, but it manifests in a somewhat different manner, as we shall see.

In the case of association by reason of contiguity in time or in space, the mind has but lit-

tle choice, or chance for voluntary effort. Things follow each other in time, according to natural law, and the mind receives the impressions in accordance therewith. In the same way, the position of things in space is likewise determined by natural events, and the mind must receive the impression in accordance therewith, just as does the photographic plate. In the case of ordinary contiguity in consciousness, such as we have considered there is a more arbitrary action of the mind. While it is true that the majority of such associations of contiguity in consciousness come about solely by reason of outside arrangement—such as the repeated mention of two names in connection, or the relation of cause and effect as in the case of the green apple and the resulting pain—nevertheless, one may deliberately link together two ideas in consciousness, solely by an act of will, without there having been any previous association in consciousness. In short, he may duplicate nature's processes in this form of association, whereas in the two other forms—time and space contiguity—he is dependent upon the natural order of things outside of himself.

For instance, I can link together in this way Moses and Julius Caesar, though there is no ordinary relation of similarity between them, and though I never have heard their names presented together. I may select them deliberately, and arbitrarily, and then by repeatedly impressing them together on my subconscious mind, will so weld them together that thereafter when I think

of, or hear, the name of one, I will be certain to recall that of the other. Nay, more, I will find myself thinking of the second one, even when I hear of something associated with the first one. And yet this is not the association of similarity, for there is no similarity between them.

In the same way, we may select certain more naturally associated ideas and give them the "preference in association," while relegating to second place other associations just as natural, and, ordinarily, just as strong. In fact, there are certain principles of mental selection of this kind, in full operation along subconscious and involuntary lines, which may be taken advantage of and applied consciously and voluntarily. Before passing on to the consideration of the second great class of associated ideas, let us take a hasty glance at these principles.

While the subconscious memory receives a complete picture of a scene, just as does the camera, it does not perceive the parts of the scene in equal degree of association. Rather, it will associate the more striking or interesting details, so that when the scene is recalled these details will "stand out" in consciousness, associated with each other, while the minor associations must be sought after, diligently, step by step, in memory. The degree of attention, usually determines the degree of association.

But as the attention is largely influenced by interest, it will be seen that the most interesting things connected in consciousness with a certain thing will be found to be more closely associated

in memory with the thing, than are the less interesting things equally as plainly observed in connection with it. But as interest, in turn, may be created by attention, we have the remedy in our own hands.

Again, we find that if certain of these things have been **repeatedly** associated with the main thing, then these particular things will gain a preference by reason of the repetition, over other things in which the repetition was absent. This is but an example of the axiom of psychology: "impressions gain in strength by repetition." The application is obvious.

Again, we find that our "feelings" have something to do with the matter of association. We prefer to associate pleasant ideas with a thing we like, rather than unpleasant; while if we dislike the thing, it is found that we prefer to associate unpleasant things with it. Frankly, then, our associations often are the result of prejudice, rather than of judgment and observation. We must be on guard against this form of preference, if we would use our minds to the best advantage. The feelings have their important place in life, but they must not be allowed to usurp the place which rightfully belongs to the intellect. A little self-examination will reveal the fact that many of the associations in our mind are the result of this form of preference.

## LESSON XV.

## THE ASSOCIATION OF SIMILARITY.

In this second great class of the association of ideas—known as the association of similarity—we enter into a much higher field of association than the first great class and its subdivisions. And yet without the existence of the first class, the second could not have come into being, as we shall see.

In the class of association by contiguity, the association is forced upon us by the laws of time or space, or else arbitrarily selected by us, as stated in the preceding lesson. But in the class of association of similarity, we exercise, at least to a considerable extent, the power of choice in selecting the ideas or objects which we wish to associate one with the other. And according to the judgment we display in making such selection or choice, so will be the character of our knowledge of any subject. Herein, may be said to rest one of the chief points of distinction between the trained and untrained mind, respectively. The one carefully selects associated ideas bearing a real and fundamental resemblance to each other, while the other selects them from only a superficial resemblance. In one case we have a bundle of carefully selected ideas, tied by the string of association, and matching each other in character. In the other, our bundle is composed of a variety of styles, shapes, and general character, and cannot be relied upon.

When our ideas upon a subject have been well selected in the associative bundle, they will be found all together when we wish to use our memory upon that subject. But in case the selection has been poor, our memory brings to light merely a sad jumble of odds and ends, bearing little or no real logical relation to each other—there will be too much chaff in our wheat. As Locke has well said: "The connection in our minds of ideas, in themselves loose and independent of one another, has such an influence, and is of so great force, to set us awry in our actions, as well moral as natural, passions, reasonings, and notions themselves, that, perhaps, there is not any one thing that deserves more to be looked after." This because of a psychological law which as is said by Stewart, acts so that "when an occasion occurs which calls for the aid of our past experience, the occasion itself recalls to us all the information upon the subject which that experience has accumulated."

But, after all, as I have said, we must have the association of contiguity in consciousness, before we can manifest the association of similarity. For we must bring the two objects into our field of consciousness at the same time, in order to be able to compare them, and by so doing we set up at least a degree of contiguous association. We must bring them together in consciousness before we can detect similarity or points of difference.

I again ask you to listen to a statement from the American psychologist, Halleck, of whom I

spoke in a preceding lesson. His words are always well worth our attention, and he has the faculty of expressing great principles in such a style that they stick like burrs in our memory. He has said in connection with the particular point before us: "Whenever any thought relation is discovered between some of our ideas, those thus related will be more apt to suggest each other. * * * If Julius Caesar was the subject of conversation, Napoleon, Marlborough, Cromwell and Wellington would naturally come to mind in preference to many another great man. War and generalship would furnish a logical bond for uniting them, no matter in what different circumstances of time and place these men lived. When a man, with a mind that has been trained to unite things by their relations, sits down to write an article or to prepare a speech, illustrative examples from all sources occur to him. Those who have not linked things together by the laws of correlation, wonder how he can think of so many pertinent associations."

Continuing,this writer says: "Some have insisted that a law of contrast is necessary, because things seem to be preferred in recall on account of their very difference. Such a law is unnecessary, for such objects will be found to have more or less of the same quality, and this is sufficient to furnish the associating link. A dwarf may suggest a giant by this so-called law of contrast; but the giant and dwarf really differ in respect to the same qualities, height and size. The giant is taller and larger than the dwarf. A

bad man may suggest a good man, because they differ in respect to the quality of goodness. One of the great beauties of a trained human mind is that it recalls things preferably by thought relations, and it is not enslaved by the accidents of time and place. * * * Whenever we can discover any relation between facts, it is far easier to remember them. The intelligent law of memory may be summed up in these words: **Endeavor to link by some thought relation each new mental acquisition to an old one. Bind new facts to other facts by relations of similarity, cause and effect, whole and part, or by any logical relation, and we shall find that when an idea occurs to us, a host of related ideas will immediately flow into the mind."**

I am laying great stress upon this phase of memory, the reason of which may not at first be apparent to the student who has not as yet grasped the broad field of memory culture. Memory culture is far more than teaching one how to remember the name of another person, or how to memorize and easily recall a verse—these things are important, but they form only a small part of the entire subject. Thorough memory culture includes the training and strengthening of the entire field of memory, so that one may be able to have at his command the vast store of knowledge which even the average man has recorded in his memory, but which is not available because he has not arranged his records properly. Even the average man would startle the world if he could but recall all that his subconscious mental-

ity has stored away, and the well informed man would shine as a genius, could he but do this thing. In fact that which we call genius is largely a matter of unfolding the subconscious records, easily and freely.

The storing away of memory impressions, and the indexing of them so that they may be brought into the light of consciousness, is entirely a matter of intelligent association, so that it is seen that the better the subject of the association of ideas is understood, the further advanced upon the path of the Mastery of Memory will the student be. Hence my extended treatment of the subject.

A writer on the subject of psychology aptly says: "Multiply associations; entangle the fact you wish to remember in a net of as many associations as possible, especially those that are logical." The concluding words of this quotation are especially significant—"logical associations." Logical associations are those which arise from real relations of likeness or difference between things thought of. This is a higher form of relation than that of contiguity in time or space, for the relation is discovered only by examination, comparison, and judgment. This form of relation may be said to be an inner relation, rather than an outer one—one must look beneath the surface of things in order to discover it.

The discovery of these inner relations between things arises from the application of the scientific mind. The scientific mind is trained to arrange things in classes, groups, divisions—to place sim-

ilar things in the same mental pigeon-hole, or drawer of the mind, so that when the contents thereof are brought into consciousness, they will be found altogether and in proper order, instead of being scattered all over the mind like papers in a huge waste-paper basket. A writer on the subject has well said: "Nothing helps the mind so much as order and classification. Classes are always few, individuals many. To know the class well, is to know what is most essential in the character of the individual. This burdens the memory least to retain."

In order to correctly classify things—to logically associate them together in memory—the following steps are followed: (1) We first bring the ideas of the things together in conscious attention; then (2) we discover certain qualities possessed by each of the things—their particular qualities, properties, and attributes, their characteristics which make them what they are; then (3) we compare these respective characteristics of the several things, and seek to discover points of likeness or difference between them, and the degrees of the same; then (4) we classify the several things according to their observed points, or degrees, of likeness or difference—and thus associate them in our memory, and place them in their proper mental compartments, so that when we want them we will find them all together and in proper order.

The task of making the proper associations between things in the memory, is practically the same process employed by us in our processes of

actual thinking. Therefore, it follows that the more closely we think about a thing, the more association will we attach to that thing, and the better able will we be to remember it. Again, the more associations in memory we discover for a thing, the greater will be our knowledge of that thing. So that by understanding a thing, we increase our memory power regarding that thing; and the more we increase our memory power about a thing, in this way, the greater is our general understanding of it. It is an excellent example of the well known mental law of action and reaction.

I have pointed out to you the four steps in the process of mental classification and association. The third step—that of correct comparison of the characteristics of things—is very important. A correct analysis of a thing, for the purpose of this comparison, will give you as near a perfect knowledge of the things as it will be possible for you to possess, and, likewise, the perfect comparison of these discovered qualities with those of a second thing will give you a perfect idea of both as a class. In fact, it is an axiom of logic that: "Thought consists principally of perceiving relations between things, and in the comparison resulting therefrom."

The discovery of the relations between things is not so simple as it seems. The science of logic furnishes us with a little key however, which may aid us in the search. I shall now present you with this logical key with which you may open

the door of the discovery of relations and logical associations between things.

FORM. Every concrete object has its own particular form, shape, figure, configuration, or arrangement of its parts, which distinguishes it from every other object. In nature there is said to be no two forms precisely alike. No two blades of grass are exactly alike, and yet there is a general resemblance between all blades of grass. Comparing grass in the phase of form, we discover many groups and classes of variety, but, again, we find a general resemblance in form between all blades of grass, which may be called its "class form." Likewise, we find that the general shape of the blade of grass resembles the general shape of another class of things. And, so on. In the same way, we may compare all things according to their respective shapes and forms, and thus discover the relation of form, like and unlike, between them.

SIZE. Likewise there is found to be a great variety of degrees of size between things. All things vary in bulk. There is no absolute largeness, nor absolute smallness—all size is comparative and relative. It is possible to classify things according to their degree of size and bulk.

WEIGHT. There is the greatest range of degree in the respective weight of objects. Objects may be compared and classified according to their actual weight, or their specific gravity. We have our memory-lists of heavy objects, and of light ones.

QUANTITY. We also may compare and classify objects by their relations of quantity, either (a) in the sense of "muchness" as in the case of a pint or quart; bushel or peck; etc., or (b) in the sense of the number of its parts, as for instance the number of legs on an insect; or windows in a house, etc.

WHOLE AND PARTS. We also recognize the relation of a cog to a machine; the door to a house; etc. This is the relation between the whole and its parts. We may also compare, and classify objects not only as wholes, but also as to their composing parts.

CAUSE AND EFFECT. We may also recognize the relation of cause and effect, as in the case of the propeller of a vessel, and the motion of the ship; or between lightning and thunder; of the firing of the gun and the fall of the game.

LIKENESS AND DIFFERENCE. The aim, and invariable result, of all comparison of things, is the discovery of degrees of (a) likeness, and (b) difference. In the discovery of these degrees of likeness and difference; the classification of things in accordance therewith; the association of these classified things in the memory and the process of deducing conclusions therefrom—in these things are found the process of rational thought.

It must not be imagined that the above list includes all the classes of relations between things. There are many others, such as origin, use, mode of action, age, color, etc., etc. I have mentioned

only a few of the leading classes, in order to illustrate the principle. But, they all result in the discovery of Likeness and Difference of qualities, properties, and attributes—in short, characteristics.

## LESSON XVI.

## THE ART OF MEMORY.

In the preceding chapters, I have sought to convey to you a clear understanding of the principles of the Science of Memory. I shall now endeavor to instruct you in the working principles of the Art of Memory. There is a difference between the two. The Science of a thing is the knowledge of its principles and causes; of the ascertained truths and facts regarding its nature and modes of action—a statement of its general laws of being and action. The Art of a thing is the knowledge of the principles and rules of its application and use; means of setting its principles to work—methods of doing its special work.

In my presentation of the Science of Memory, I have endeavored to give you considerable information regarding memory culture and memory training, in a general way, in connection with the theory and science of memory. And, in my presentation of the Art of Memory, I shall try always to explain the underlying principle involved in any special exercise, rule, or plan. But, nevertheless, I feel that the part of the teaching which we are now approaching may be considered as the "practical" phase, as compared with the "theoretical" phase which we have just completed. This, however, must not be considered as decrying or underrating the value of theoretical phase of the subject. For, unless we base

our art and practice upon a firm foundation of theory and science, we will not reach our full degree of efficiency.

Science informs us as to the "why" phase of things—Art as to the "how" side. The two combined give us the full "know how" efficiency. It is a favorite expression of the times that the man that is needed is the man who "can do things," rather than the man who merely "knows about" the things. But the man who can simply "do" a thing without also knowing why he does it, is apt to be sooner or later superseded by the man who knows both the "why" and the "how"—the composite, complete, "know how" man, who combines in himself the advantage of both theory and practice; of both science and art. One-sidedness is too often "lop sidedness." A complete balance requires both sides equally developed.

THE THREE PRINCIPLES OF MEMORY EFFICIENCY. The Art of Memory, that is to say the art of training and employing the memory to act efficiently, may be said to comprise three great general principles or phases, namely:

I. The Principle of Perception;
II. The Principle of Association;
III. The Principle of Recollection.

These three principles will be employed in every exercise, rule, or principle of application, that I shall present to your attention in the chapters to follow. These principles should be memorized, and kept in the front of the mind. They are more than mere conveniences of presentation

of the subject. They represent distinct phases of the operation of memory, and an understanding of the part played by each will enable one to use his memory with far greater efficiency.

Like many other arts, that of Memory can be best employed by one first "learning the motions" involved in the entire process, and then perfecting himself in each of them, to the end that the combined process may be manifested in the best possible and complete manner. Just as the swordsman learns the art of guard parry and thrust, separately, before he may employ them in effective combination, so should the student of memory so learn the best way of applying the above stated three principles of memory, in order that he may effectively employ his entire machinery of memory.

EFFICIENCY. Authorities on the Science and Art of Efficiency, have laid down the rule that there is a BEST WAY of doing anything, and the aim of Efficiency is to discover that best way. To be the best way, these authorities tell us, the way must be (a) the way producing the greatest return for the work and time employed; (b) the way requiring the least time to produce the best results; and (c) the way requiring the least possible effort to obtain the best results. A combination of these three things, produces the best way in which any work may be performed, or any object attained. This is known as the Rule of Efficiency. I shall ever bear this rule in mind in my instruction, and I ask that every pupil memorize it and apply it in his work. No waste

motion; no waste time; and the greatest results —that is the ideal.

THE PRINCIPLE OF PERCEPTION. Before an impression may be recorded in the memory, much less recalled, it must first have been perceived in consciousness. There is a vast difference betwen the mere mechanical registering of an outside thing by the senses of sight, hearing, feeling, smelling, tasting. These senses may register while we are asleep, or unconscious from the effect of a blow, and yet they may not be perceived in consciousness—and, accordingly no impression will be made upon the memory. Perception is a distinct and specific action of the mind itself. The physical senses report many thousands of things every day, which are not consciously perceived by us. The faculties of perception exercise the power of choice, to a considerable extent, and usually shut out of consciousness far more sense reports than they admit. The reports of the senses may be compared to the many knocks at the door of consciousness, of which but comparatively few are answered by the opening of the door of the mind.

This fact has a very important bearing upon the question of memory, for the memory records only that which is perceived in consciousness. And, equally important is the fact that the degree of the impression made upon the memory is determined by the degree of perception bestowed upon the object causing the impression. There are many degrees of perception, varying from the dim fringe of sensation to the full conscious per-

ception inspired by concentrated voluntary attention.

In a way, we may be said to perceive every sensation awakening consciousness in the slightest degree. Yet there is a marked difference between such slight perception, and that of even the average conscious recognition of an object. For instance, we may see a blur of red by means of simple sensation, but a fuller perception is required before we recognize that the red thing is a rose. If the attention is directed elsewhere, we get but a dim perception from an object; or, in case of concentrated attention upon another object, we may get no perception at all from the one before us.

As I have stated in the earlier lessons of this course, perception is dependent upon attention for its effect—attention voluntary, or involuntary. The greater the degree of voluntary attention we give to a report of the senses, the greater is the degree of perception, of course.

There is a wonderful range of degree of perception manifested by different individuals. Some persons go through life perceiving very few things, and these things very imperfectly. Others perceive fairly well the things connected with their daily occupations, but very little else. Others manifest a very high degree of perception, and to such the world becomes a very different thing than it appears to be to the indifferent observer. The Indian will detect a hundred things along a path in the forest, which will be absent to the perception of the white man from

the large city. The man experienced in handling certain articles of merchandise, will perceive many little distinguishing marks which are invisible to the man outside of that line of work.

It is impossible for a man to know any more about a thing than he has perceived to exist in the thing—either by direct perception or by perceiving the results of the observation of others. And as he does not know these things, he cannot be expected to recall them from memory—for they have never been placed there in the first place. The more closely a man observes a thing, the greater his perception of its characteristics, and the greater his knowledge of that thing—and these things constitute the records and impressions of memory.

For the reasons just given, the instructor in the Art of Memory endeavors to present to his pupil the simple, elementary rules and principles which underlie the power of close and accurate observation, for by so doing he is pointing out the road to clear, distinct memory impressions upon the subconscious mind. There is no royal road to observation, and work is always required in order to gain perfection. But there are certain rules which, if applied, will be of great service to the student who wishes to acquire the art of efficient observation and perception, as means to acquire a strong usable memory. These rules and principles I shall give you in the following chapters.

THE PRINCIPLE OF ASSOCIATION. The principle of association in memory training,

may be said to be the principle of the filing and indexing of the records of the things perceived, which are stored away in the subconscious mind. It is of very little use to us to have stored away in our memories a vast number of separate impressions and bits of knowledge, if we have no easy way of getting at them—of finding them—when we want to make use of them. Such a mind is like a great letter-file, lacking an index. We know that the letter is somewhere in the memory, but we cannot lay our hands on it because we have no system of classifying and filing away our letters, and no system of indexing them so as to show their position. The average large business house spends large sums of money to purchase, and keep in operation, its system of filing away, and indexing, its papers, letters, orders, etc. Without such system, it could not do business effectively and profitably.

In the same way, we find that great works of reference, such as sets of law reports, encyclopaedias, and other works of the kind, have very complete systems of indexing and cross indexing the contents thereof. It is of the utmost importance that the user of such a work be able to find that which he seeks with the smallest expenditure of time and labor—hence these elaborate indexes. Students of the Bible generally use what they call a Concordance, in which they find the place in the Bible occupied by any word or sentence conveying an idea. By reference to this Concordance, one may find just how many times the word "faith" occurs in the Bible, and

the precise place of each occurrence. Or, in the same way he may find where sentences or paragraphs conveying a certain leading idea appear in the book. Without such a work it would be impossible for the Bible student to pursue his studies efficiently and intelligently. Imagine a dictionary in which the words were placed at random, instead of appearing according to the prescribed self-indexing plan! Such a dictionary would be almost worthless. But this would be no worse than a memory filled with recorded impressions, without the index of association to be used in recalling them. Do you get the idea?

In the following chapters, I shall point out the way toward the best known methods of associative-indexing, so that you may tie up your ideas with as many associated ideas as you may desire. In this way you have as many cross-index references as you have associations, and should have but very little trouble in finding any idea which you have recorded in your memory.

THE PRINCIPLE OF RECOLLECTION. There is a difference between "remembrance" and "recollection," according to the psychologists. The usual distinction made is that whereby "remembrance" is held to imply the involuntary exercise of memory—without any special desire or effort; while "recollection" is held to imply the voluntary exercise of memory—by special desire and effort. As some have expressed it: "When the memory remembers without having tried to remember—that is remem-

brance; when it remembers after having tried to do so—that is recollection."

I teach a student how to recollect, first by preparing the way by clear, strong impressions upon the memory; then by a scientific recording and associative indexing, and cross-indexing, of such impressions; and, finally, by the use of voluntary attention and will, aided by practice and exercise, in the actual work of recollection. It is very difficult, of course, to teach a person how to use his will and attention, by simple direction. But, this difficulty may be overcome, greatly, by causing him to perform certain exercises and rules, consciously, faithfully, and systematically, according to well-tested plans and systems based upon proven psychological principles. I may not be able to tell a man how to move his arm, by mere words. But, by taking hold of his arm, and moving it, I may convey the idea of the motion to him, so that he will be able to repeat it. This is akin to the work of the teacher who places his hand over that of the little child, who is beginning to write. By tracing the movement in this way, the child acquires the motor-habit and is able to make the movement by himself a little later on. I shall try to teach you the art of recollection in much the same way, after having first given you the method whereby you have something to recollect, indexed in such a way that you may find it when you seek it. Do you get this idea, also?

## LESSON XVII.

## THE PRINCIPLE OF PERCEPTION.

We are aware of the existence of the things of the outside world solely by reason of the reports of the five senses, received through the several sense organs, transmitted over our nervous system, perceived by our consciousness, and then more or less considered by our reflective faculties. We do not actually become aware of the things of the outside world, themselves, and directly. We do not really perceive these outside things themselves. We really perceive and become aware of certain sensations within ourselves, which experience teaches us to connect with certain things outside of us, and to thus identify and recognize those things.

For example, your mind does not actually come in contact with the page which you are now reading, and thus know it to be there. What really happens is that a ray of light, falling upon the page, is reflected to the wonderful optical instrument which you call your "eye." Passing through the little lens of the eye, and thus becoming focused to a tiny point, the ray falls upon the retina of the eye, which is an extremely sensitive nervous membrane lining the inner, back portion of the eye. Connected with the retina, and terminating therein, are a multitude of tiny nerve filaments, the other ends of which terminate in the brain. These nerve filaments gather up the vibrations set up in the retina by the

focused light waves, and carry them to the brain, where in some mysterious way they are "perceived" in consciousness.

The lens of the eye is merely a mechanical device—an artificial one would do the same work—so the perception is not performed by the lens. The retina, and the nerve filaments, are but receivers and transmitters of the vibrations set up by the light waves—so they do not perceive, either, though their office is higher than that of the lens. The real perception is performed by that wonderful, and unexplainable something, which we call Mind, which operates through and in the brain. The real connection between brain and mind is not known to science—the matter remains a leading subject of psychological and philosophical argument, but does not concern us here.

SENSE OF HEARING. We become aware of certain vibrations in the air, known to us as sound, first by means of a peculiar membrane called the tympanum, or "ear drum." This membrane is located at a focal point in the ear, where it receives the vibrations of the outside air, which reach it by means of an ingenious arrangement of the ear-cavity which brings these vibrations to a focus at the point at which the tympanum is located. The tympanum intensifies and magnifies the sound vibrations reaching it, and transmits them to the auditory nerves in the internal ear, which in turn, carry them to the brain. Here the mind perceives the "sound,"

and by experience identifies it with some outside source or cause.

SENSE OF SMELL. We become aware of the presence of certain things of the outside world by means of very minute particles of the outside substance entering our nostrils, coming in contact with the sensitive mucous membrane thereof, where it sets up an irritation of the nerve-ends which terminate there. This nerve irritation transmits a vibration to the brain, where the mind perceives it as "smell" and identifies it with something in the outside world, by reason of its past experience.

SENSE OF TASTE. We become aware of certain qualities in outside substances which we have taken into our mouth, by means of certain tiny cells on the tongue, known as "taste buds," which connect with certain nerves which terminate in the brain. Reaching the brain the taste vibration is perceived by the mind and identified, by experience, with qualities of certain outside substances.

SENSE OF TOUCH, OR FEELING. Extending to all parts of the body, are countless tiny nerve filaments, of great sensitivity, connected by means of larger nerve cables with the brain. There is a great difference in the respective degree of sensitiveness of these nerves, depending upon their location. For instance the nerves of the finger-ends, tip of the tongue, etc., are far more sensitive than those of many other parts of the body; while those of the back are far below the average in degree of sensitiveness.

These nerves are sensitive to the contact of outside objects, and transmit vibrations, arising therefrom, to the brain. These vibrations are perceived by the mind, and recognized as indicating the presence of the outside thing, as well as certain qualities inherent in it such as roughness, hardness, etc., as well as degrees of temperature.

Many of the best scientific authorities hold that all the five senses are, at the last, merely modifications and adaptations of the original sense of touch or feeling. The sense of touch, or feeling, is believed to be the elementary, or rudimentary, sense, from which the other four have evolved in order to meet the requirements of the advancing forms of life.

SENSATION. These reports of the sense organs are taken up by the brain and translated by consciousness into what are called "sensations." Just how the vibration of the nerve and brain substance becomes that wonderful thing called "consciousness," nobody knows. As that eminent scientist, Huxley, profoundly stated it: "How it is that anything so remarkable as a state of consciousness comes about by the result of irritating nervous tissue, is just as unaccountable as the appearance of the jinnee when Aladdin rubbed his lamp." This becomes all the more remarkable when it is remembered that, unless the attention is turned upon the report of the sense organs and nerves, these reports are not translated into conscious sensation—are not perceived by the mind.

That which we call Mind is the great perceiver, consciousing power, and knower. The mechanism of sensation are but the wires, sending and receiving instruments, receivers, transformers, and transmitters, by which the mind becomes aware of the messages from the outside world. Without this thing we call Mind, these messages would not be perceived or known. The brain is the great central station, which is used by the mind, or mental powers, to receive all messages from the outside world, where it exercises its choice in the matter of selecting those which it wishes to perceive and know in consciousness. As choice is held to be a power of the will, it would seem that, at the last, the will was in control of the process of perception and knowing—but, then, what is IT that wills? This question remains unanswered by science, and speculation regarding it is outside of the field of our present inquiry.

But while the mind is recognized as being the real perceiver and knower, we must not, therefore, depreciate or decry the importance of sensation and the senses. It has been well said that "sensation is the raw material of knowledge," and many go so far as to say that our knowledge is built entirely of sensation, and that without sensation there could be no knowledge. I shall not argue this question, on either side, but will content myself with asking you to consider what would be the mental state of a person who had been born without any of the five great avenues of the senses being open—that is devoid of prop-

erly working senses of sight, taste, smell, hearing and touch or feeling.

To such a person the outside world would be practically non-existent, no reports would come from it. No knowledge based on experience would be possible—and all of our knowledge, or nearly all, seems to be so based. We can faintly imagine the state of such a person, when we think of the handicap of the person who lacks any one of the senses—the loss of more than one becomes a tragedy. Helen Kellar lacked sight and hearing, but she had the sense of touch highly developed, and was able to open communications with the outside world through that one avenue. Lacking that saving sense, what would she have been? Even the person who loses one or more of his senses, has at least the experience of the outside world retained in memory—but what of the person born without them?

A popular psychologist has well expressed this idea in the following paragraph: "Marvelous as are the mind's achievements, we must note that it is as completely dependent upon the nervous system as is a plant upon sun, rain, and air. Suppose that a child of intelligent parents were ushered into the world without a nerve leading from his otherwise perfect brain to any portion of his body, with no optic nerve to transmit the glorious sensations from the eye, no auditory nerve to conduct the vibrations of the mother's voice, no tactile nerves to convey the touch of a hand, no olfactory nerve to rouse the brain with the delicate aroma from the orchards and the wild flow-

optic
auditory
tactile
olfactory

ers in spring, no gustatory, thermal, or muscular nerves. Could such a child live, as the years rolled on, the books of Shakespeare and of Milton would be opened in vain before the child's eyes. The wisest men could talk to him with utmost eloquence, all to no purpose. Nature could not whisper one of her inspiring truths into his deaf ear, could not light up that dark mind with a picture of the rainbow or of a human face. No matter how perfect might be the child's brain and his inherited capacity for mental activities, his faculties would remain for this life shrouded in Egyptian darkness. Perception could give memory nothing to retain, and thought could not weave her matchless fabrics without materials."

To realize to what a remarkable extent our outside world depends upon our power of perceiving impressions from things outside us, and consciously perceiving them, we need not even go so far as to imagine a condition such as indicated in the immediately preceding two paragraphs. We may grasp the idea by imagining what the outside world would seem to be to an individual of a race of one-sense men—the sense of touch or feeling, for instance. His entire memory and field of knowledge would contain only the recorded perceptions of touch. His world would be very limited and small. Add the senses of taste and its half-brother, smell, and a new world would open out to him. Add to this the great sense of hearing, and realize what an aid and advantage it would be to him, and how his world would have grown. Finally, let him

awaken some morning with the sense of sight gained overnight—can you not see that the world, life and mind would be entirely revolutionized by the new channel of sensation and perception?

Let us proceed still further, and imagine a new sense awakened into activity in man, and try to realize how the world would grow for us. And this is not beyond the range of possibilities. There are great fields of vibrations which are not perceptible to the mind of man, because he has no sense organs to receive and transmit them to his mind. If man had sense organs capable of receiving and transmitting the waves of electricity and magnetism, an entirely new world would seem to have been created for us. If our sensory mechanism could receive and record the vibrations of the X Rays, we could actually "see" (!) through a stone wall, or into the interior of a building, or even view the centre of a great stone block. This would be no more wonderful than would the sense of sight seem to a race of blindmen. An ear sensitive to electrical waves would perform the services of a telephone, and enable us to hear over great distances—from here in Paris to Petrograd, from New York to San Francisco, from London to Buenos Aires, for instance! All of these things are theoretically thinkable, or imaginable!

Carpenter, the old-time psychologist, once said: "It does not seem at all improbable that there are properties of matter of which none of our senses can take immediate cognizance, and

which other beings might be formed to perceive in the same manner as we are sensible to light, sound, etc." Another old writer says: "It may be that within the field occupied by the visible and ponderable universe there is existing and moving another element fraught with another species of life—corporeal, indeed, and various in its orders, but not open to cognizance of those who are confined to the conditions of animal organization. Is it to be thought that the eye of man is the measure of the Creator's power?—and that He created nothing but that which he has exposed to our present senses? The contrary seems much more than barely possible—ought we not to think it almost certain?" A later writer has said: "If a new sense or two were added to the normal number, in man, that which is now the phenomenal world for all of us might, for all that we know, burst into something amazingly different and wider, in consequence of the additional revelations of these new senses."

There is, however, a new world of conscious experience possible even to those whose senses are not above the average in number or quality. By the use of the attention, intelligently applied, every individual may open up a larger and new world of experience and knowledge, here in his everyday scenes, and using only his ordinary five senses. By so doing he will store his subconscious memory storehouse with a wealth of new records, each clear and deeply impressed and easily found when desired because intelligently indexed by association.

## LESSON XVIII.

## DEVELOPING PERCEPTION.

As I said in the preceding lesson, the world of the individual consists solely of what he has created from the raw material of what he has perceived. The ignorant man of a low degree of perception, has a very small world indeed; while he who has observed and perceived well that which has been presented to his senses, has built himself a comparatively large world. A man experiences only that which he perceives, and he perceives only that which is chosen by his mind from the impressions of his environment.

Perception is a matter of education, practice, and repeated effort. The eye of the child sees just as much as that of his father, but the father perceives much more than does the child; and, likewise, the friend of the father may perceive far more than the latter, from the same environment. The child has developed in perception from its earliest days. Its eye, from the first, pictured the impression of the outer scene, but the mind of the child needed practice and effort before it was able to gauge distance, size, etc., from the picture.

To the eye of the young child there is no sense of degree in distance—all objects seem equally near, and the infant reaches out its hand to grasp the moon, just as readily as to reach its rattle. Its ear must learn to distinguish between near sounds, and those from afar—to distinguish the different tones indicating the voices of different

individuals. Its sense of touch is very clumsy, at first, and it finds difficulty in interpreting its reports. And, most important of all, it must learn to identify certain sensations with certain outside things—to recognize the connection and relation between them.

This is true not only of the infant, but also of adult persons who have had a lost sense restored to them—as in the many recorded cases of persons born blind, who had their sense of sight opened by a surgical operation. These persons had to learn size, distance, etc., step by step, as does the infant—which goes to prove that perception is altogether a matter of mind, and may be developed, trained, and educated. In fact, the greater part of man's education comes to him in just this way.

We hear and read much about the importance of training and developing the several senses. All this is true enough, but we must not forget that we do not develop the mechanism of the senses in such training, for the matter is one higher in the scale of organism. What we really do is (a) to develop the perceptive powers of the mind, by training, exercise, and the use of the will, so that they will perceive many more things in the impression of the senses than was formerly possible —the impression registers precisely the same in both cases, the difference being solely that of degree of perceptive power of the mind; (b) to develop increased sensitiveness in the nervous matter of the sense organs, so that they will more delicately "sense" the physical impression made

upon them through the channels of the sense organism, and thus more clearly report them to the mind—this development results from the exercise of the mind in the power of perception, and is a direct result of the stimulating and strengthening power of attention, for it is a rule that attention directed to any part of the body tends to develop sensitiveness in that part.

SIGHT-PERCEPTION. There is the greatest possible range of degree of sight-perception between different individuals. Let us illustrate this, to show the result of training, experience, and culture. Let us begin with the case of an adult, born blind, whose sight has just been opened to him by a surgical operation. The actual surgical reports of such cases show that as soon as the eye is strong enough to bear the strain of a strong light (this takes time, by-the-way) the patient is permitted to gaze at a landscape, for instance. He will report that he perceives merely blotches of color, of different hues, forms, and size—all is a sort of blur to him. There is no sense of perspective, or distance—the far-off thing seems as near as the near-by one. No details are perceived—even the colors do not appear clearly, but as a smudge. There is no identification of sight-images with persons or things. The patient does not recognize his friends or relatives, nor does he know that the queer blur before him is his favorite chair or table. It is only when he places his hands upon a thing, that he now also sees, that he is able to reconcile the new sight with the old feeling, and

thus really perceive and know the sight-image as the symbol of the familiar thing he has so long known by the sense of touch. Or, when he hears the familiar voice of his loved one, or feels the touch of her hand, that he is able to perceive and recognize the identity of the seen thing.

From this point he learns by experience, by testing things by touch, and by comparing his experiences—aided of course materially by his memory—and gradually learns to perceive distances, size, form, etc., as well as to distinguish between shades and hues of color. He does not know that a strange creature seen is a dog, until he has felt it, or heard it bark. But, he soon learns to compare the image of new dogs with the familiar one, and thus knows a dog when he sees him, as distinguished from a cat. In short, he travels over the same road as does the young child—developing the latent powers of his mind. It is a far cry, is it not, for such a person to the case of the mosaic workers at the Vatican, whom Herschel stated were able to distinguish correctly between thirty thousand different shades, tints, and hues of color!

Familiar as we may be with the more common cases of development of sight-perception, the majority of us fail to realize to what wonderful extent the sight-perception may be developed in ordinary individuals who specialize along lines requiring such development—the sciences, arts, and trades furnish us with a wealth of cases illustrating this principle. Let us examine a few of the more common ones.

Artists distinguish fine shades, tints and hues of colors that are imperceptible to the ordinary person—simply the result of interest, attention and practice. A person familiar with engraving will detect the most minute points of difference in prints, engravings, etc. Persons familiar with engraved bank notes, are able to detect counterfeits at a glance, even in cases where the ordinary eye fails to detect the slightest difference from the original. Experts in handwriting are able not only to recognize the handwriting of any individual, and to distinguish from its counterfeit, but also to detect its characteristics even when the writer strives to disguise it; and even to recognize the mental and physical condition of the individual, at the time of the writing, solely from an examination of specimens from his pen. These points of difference are not perceived or recognized by the ordinary person.

Houdin, the great French conjurer, deliberately developed his memory and powers of visual perception by methods which I shall mention later on, to such a degree that he was able to pass rapidly by a shop window, taking but one sharp glance at its contents, and then, out of sight of the window, he could give a list, practically complete, of the various articles displayed in the window, even to the most trifling objects. More than this he taught his assistant to do the same thing. This would seem almost incredible were it not verified by the best authority.

It is related of several well-known artists, that they had developed their visual perception to

such a high degree that they would grasp all the little points of a person's appearance at one glance, and afterward be able to reproduce the same on canvas. Several celebrated bets based on this power, are recorded in the history and lives of eminent artists.

A familiar instance of this class of perception is found among many women of fashion, as everyone knows. They are able to give a quick glance at the wearing apparel of other women, and thus take in the perception of the costume to the most minute detail, afterward reciting the same perfectly. I have known many women in Paris, and elsewhere, who had developed this faculty to an almost incredible degree of perfection.

Akin to this is the visual perception, and accompanying memory, of certain well-paid observers of Parisian milliners and costumers. Gaining access to the rooms of rivals in trade, they will sweep the contents of the show-cases at a single glance, and in that glance will perceive not only the general style, but also the details of trimming, ornamentation, decoration, etc., so perfectly that they will be able to reproduce the same at their leisure in the workshops of their employers.

Large shops in Paris employ trained observers of this class, who promenade through the aisles of the shops of their competitors, taking detailed note of any new styles, improvements, etc., their identity being carefully concealed as a matter of policy, of course. I understand that this form

of trained observation is equally common in London, and particularly so in the large American cities—in fact, the American observers are said to excel in this faculty of photographic visual perception, and memory, and frequently receive very high salaries for this skilled work.

It is well known that professional thieves in the large cities of the world, employ apprentices as observers, disguised as beggars, messengers, errand boys, etc., who visit places designed to be the scenes of future robberies. These observers take a hasty glance at the premises, noting the location of doors, locks, windows, etc., which they note on paper after their return. Thus furnished with a map, the thieves have a great advantage of efficient entry, quick work, and escape, when the crime is committed.

Spies, and detectives in the employ of the secret service of the various nations, usually have this faculty well developed—sometimes to a wonderful degree. I personally have been informed by a high official of a certain government, that he has in his employ a female spy who is able to perceive an entire page of a letter at a single glance, and afterward to reproduce its contents from memory. This would seem incredible, were it not supported with records of many other cases in history, of the same kind. In fact, such faculty may be developed by any person of ordinary perception, if he will devote enough time, work and interest to the task.

Many great readers of books really visualize entire lines of the book, instead of single words,

and cases are not lacking in which whole sentences are so grasped by a single effort of attention. Other cases, more rare of course, are those in which entire paragraphs, and even a page of the book are so grasped in perception at a glance. Natural faculty! you may say. Yes! to an extent —but you, yourself, may develop it if you are willing to pay the price of interest, patience, perseverance, work, and time!

Sound-perception is likewise capable of being trained and developed to the same remarkable degree. In fact, it is so developed in many cases, as we may see by observing those whose occupations require such keen perception of sound. The cases of skilled musicians occur to you at once, in this connection. The average musician detects shades of tone, which do not exist for you. The leaders of large orchestras are able to distinguish the slightest error in note or tone of any one of the instruments being played before them—to pick out the softest note in the flute, from the tremendous volume of sound emitted from hundreds of instruments, large and small, is no slight task, yet it is of daily occurrence in large orchestras, as any musician will inform you.

There are many persons who are said never to forget a voice they have ever heard; and to be able to distinguish one particular voice from any of the thousands of others they remember. I have known persons to be able to distinguish between the footsteps of many persons, coming and going, in the halls of a large institution, simply

by sound, the passing persons being out of sight. Telegraphers can tell who is at the other end of the wire, by slight differences in the sound of the receiving instrument. Machinists can tell in a moment that there is trouble with their machine, simply by an almost imperceptible change in the "whir."

Likewise, the old engineer will detect engine trouble at once in the same way, from the sound reaching his ears. It is said that an old locomotive driver, or engineer, will hear the little scratching sound of a small part of his engine, reaching him over and above the roar of the running train. Trainmen will tap the wheels of the carriages, and will know at once if there is a crack or break, or other trouble. Pilots, and officers of boats, are able to recognize the whistle of any other boat with which they are familiar, and many railroad men are able to recognize the note of different locomotives in the same way.

TOUCH, TASTE, AND SMELL-PERCEPTION. It is well known that many persons have developed the sense of touch to a remarkable degree. We will pass over the wonderful instances of this class of perception on the part of blind persons, although even these come under the same rule. Persons who handle certain kinds of merchandise are able to recognize fine points of difference in their wares, simply by touch-perception. Wool sorters, and graders of different kinds of material have this form of perception highly developed. There are but very few lines of trade that do not furnish instances of persons

becoming very expert in distinguishing the quality of goods simply by the "feel." Some of these men are paid very high salaries by reason of this faculty.

In the same way, the perception of taste and smell may be highly developed and trained, as is evidenced by the case of perfumers, who are able to distinguish between the most delicate shades of odors. The blind have this form of perception highly developed, and in many cases are able to distinguish between the odor of gloves, etc., belonging to different persons. I have known young children to possess this faculty to a high degree. I need not refer to the power of smell-perception in the case of animals, particularly in dogs.

As to taste-perception, I have but to call your attention to the epicures who are able to distinguish many points of difference and distinction in food and drinks, which are imperceptible to the ordinary individual. Many persons are employed in the trades, because of this faculty. The tea-tasters, and wine-testers, are well-known examples of this class. A skilled tea-taster will be able to tell not only from where a certain sample of tea came, but also its market value, etc., simply by letting the decoction pass over his tongue. The wine-tester is able to perform the same office in the case of wines. In the case of taste-perception, however, the smell-perception is usually involved, as it is very difficult, comparatively, to rely on the taste if the sense of

smell be shut off, as many know from experience, and as may be tested by experiment.

But in all cases, it is Mind that perceives—remember that always! And the training must be that of the mind, first, last, and always. The mind, in turn, has the power, and the inclination, to increase the sensitiveness of its instruments, when this is needed to keep up with its own increased power of perception. And this increased sensitiveness, in turn, reacts upon the perceptive faculties and increases their power by lessening friction. But the mind must be approached first, in the work of the development of sense-perception of all kinds. This is axiomatic!

## LESSON XIX.

## PERCEPTIVE EFFICIENCY.

From what has been said on the subject up to this point, you will readily see that the first step in effective perception, or perceptive efficiency, is to cultivate the attention, and to acquire the habit of bestowing attention upon the thing which you wish to study or memorize. The cultivation and proper use of attention is largely a matter of practice and exercise. In this connection, you should remember that "attention follows interest," and therefore you should endeavor to awaken an interest in the thing under consideration or study. Likewise, you should remember the other axiom that "attention awakens interest," and therefore, you may acquire an interest in an uninteresting thing, by bestowing upon it a little extra attention. This process of interest-attention, and attention-interest, is like an endless chain, in which attention causes interest, and interest causes greater attention, and this attention causes greater interest, and so on—reminding one of a certain old French ballad, which has its rollicking counterpart in the American chorus which runs: "We're here, because we're here, because we're here, because we're here," etc., etc. Another example of the universal law of Action and Reaction.

I cannot too strongly impress upon your mind the importance of securing clear deep impressions of the things you wish to remember. The

depth and clearness of these impressions, of course, depend upon the amount of attention you give the thing at the time the impression is made. And, this degree of attention, as I have said, repeatedly, is largely dependent upon the amount of interest you have in the thing observed. Well did Joseph Cook say: "Attention is the mother of memory, and interest is the mother of attention. To secure memory, secure both her mother and grandmother." In my class room, here in Paris, I have this axiom painted in letters of gold, hanging in full view of the class, so that it becomes indelibly impressed upon the minds of my students. I wish that I could produce the same impression upon the mind of every student of this book—will YOU not remember this for me, dear student?

We remember with comparative ease the things that we like, and find it difficult to remember the things that we do not like. For instance, the boy who finds it difficult to remember his lessons, has no trouble in remembering all the details of the cricket or baseball games of several seasons. He knows the batting averages of each prominent player, and can tell you the life history of the majority of them. A woman may have a wretched memory for ordinary things, but nevertheless have a very keen, clear, accurate memory of details of dress, cost of wearing apparel, or the little tender details of her love affairs.

I once knew a woman, in Paris, who could never remember a historical date, or a date con-

nected with business matters, but whose memory was like a photographic apparatus regarding the dates connected with her somewhat numerous and varied love affairs. She could not tell the date of the French Revolution, the Fall of the Bastile, or the Franco-German War (her woman friends asserted that moreover she could not remember the date of her birth, but that was probably a malicious addition), but she could tell you the exact date when she met her first sweetheart, the day he gave her the first kiss, etc., etc., **ad nauseum.** Do you see the principle involved? Cultivate interest, and attention will follow! Learn to "like" the things you wish to remember, and your attention will register the details regarding them!

The following incident in the life of Agassiz, the great naturalist, will give an excellent example of the relation of attention and interest. It will serve as the basis of many exercises which you may practice, as well as illustrating an important principle. Agassiz, it may be mentioned, was renowned not only for his own extraordinary powers of perception, but also for the fact that he developed like powers in his pupils—therefore his services as a teacher were in great demand. The story is told by one of his pupils, and runs as follows: The pupil was first taken into the laboratory, and told to examine the outer appearance of a fish laid before him, as closely as possible, so as to give as complete a report as possible about it, later on when the teacher should return to the room.

He looked the fish over for a few minutes, noted its general shape, its fins, its tail, etc., and was sure that he had learned all that was to be known of the outer form of that fish at the end of a quarter-hour. He then grew tired of waiting for the teacher who had disappeared. In disgust, the student again seated himself by the fish, and looked casually at it—and lo! he saw something new in its details. Becoming interested, he examined it more carefully, and was amazed to discover quite a number of new details. Then came another period of disgusted waiting—he knew all about that fish—why should he be kept waiting longer? Lunch time came—and still no teacher. After lunch, another tedious wait! To while away the tedious moments, the student went back to the fish, and began idly to count its scales. In doing so he was surprised to notice that the fish was without eyelids.

The teacher then returned, and expressed dissatisfaction with the result of his observations, and left him after telling him a "pencil is the best of eyes," bidding him write down the results of his observations as he proceeded. The student, in despair, plucked up a new interest in extending the length of his written list, and was amazed at the many new points of interest in the fish that he brought out in this way.

Agassiz kept the young man at work on this fish for three long days, and was rewarded by securing a remarkably long list of details that the student had observed. But, best of all—and this was the real purport of the lesson—the student

learned how to observe. In after years he testified to the fact that his own wonderful power of perception and observation was the direct result of this first lesson, and those which naturally evolved from it. It was said both of the teacher and this student that they could describe an ordinary insect in such a way as to invest it with romantic interest. Those who have read Fabre's works on ants, bees, spiders, etc., or who have read Maeterlinck's "Story of the Bee," will understand what I mean.

EXERCISE. Many exercises may be based upon the above recorded story of Agassiz and his pupil. The principle is simple. It consists merely in placing an object before you, and then studying all of its details, making a list of the same in writing, as you proceed. Note its general shape, its color, etc., then proceeding to its minor details—this will help you to make a classified chart, under the divisions of which you may record your details. After your interest has waned, and your attention slackened, put the object away.

Before taking it up the next day, try to recall as many of the recorded points as possible, and then read over your list and see how many you have missed. Then, the next day, resume your observation. You will be surprised to find that your subconscious mind has digested the former work, and that you have a renewed interest for the task. You will discover many new details, each time you take up the task. And, moreover, you will find that your power of general percep-

tion, and the memory thereof, will have increased to a marked degree.

Another form of efficiency in perception is well illustrated in Kipling's charming story about his little hero, "Kim," who was matched against a native boy, by old Lurgan Sahib, who wished to train Kim for the Indian Secret Service work, in which accurate and rapid perception is most essential. The native boy was an old hand at the game—while Kim was a novice. The old man threw fifteen jewels on a tray, and bade the two boys gaze upon them for a moment or two. Then the tray was covered, and each boy recited what he had observed. Here follows the result, as told by Kipling: " 'There are under that paper five blue stones, one big, one smaller, and three small,' said Kim all in haste. 'There are four green stones, and one with a hole in it; there is one yellow stone that I can see through, and one like a pipe-stem. There are two red stones, and—and—I made the count fifteen, but two I have forgotten. No! give me time. One was of ivory, little and brownish, and—and—give me time.' But Kim could do no better.

" 'Hear my count,' cried the native child. 'First are two flawed sapphires, one of two ruttees and one of four, as I should judge. The four ruttee sapphire is chipped at the edge. There is one Turkestan turquoise, plain with green veins, and there are two inscribed—one with the name of God in gilt, and the other being cracked across, for it came out of an old ring, I cannot read. We have now five blue stones; four flamed emeralds

there are, but one is drilled in two places, and one is a little carven.' 'Their weight?' said Lurgan Sahib, impassively. 'Three—five—and four ruttees, as I judge it. There is one piece of greenish amber, and a cheap cut topaz from Europe. There is one ruby of Burma, one of two ruttees, without a flaw. And there is a ballas ruby, flawed, of two ruttees. There is a carved ivory from China, representing a rat sucking an egg; and there is last—Ah, ha!—a ball of crystal as big as a bean, set in gold leaf.' He clapped his hands at the close." It is interesting that the mortified, defeated Kim, so profited by the experience that he managed, finally, to out-do the native boy at his own game, and by so doing aroused his jealousy to such an extent that he tried to murder Kim.

The above story illustrates a well-known series of games, quite favored in Oriental lands, designed to develop the perceptive faculties to a wonderful degree. Many Orientals are able to cast a single, apparently sleepy, casual glance at a table full of objects, and then to write down a full and complete list thereof. But this power is not a natural gift, by any means—no one is born with it—it is all a matter of hard work, steady practice, and gradual development. It is largely a matter of arousing the subconscious mind to reach out for and assimilate the impressions poured rapidly in upon it by the trained perceptive faculties. Practice, practice, practice—attention, interest, attention, interest—that is the whole story! YOU can do these things, if you

"want to" with sufficient power and determination.

In France, and in Italy, the boys play a game which is based on the same principles as the Oriental games just mentioned. The Italian boys call it "Morro," while the provincial French boys know it by a French term signifying "little foxes"—and its practice indeed makes little foxes of the boys playing it. The game is played by one boy showing a closed fist, from which he suddenly opens any number of fingers. The other boy must state instantly, and without hesitation, the exact number of fingers shown. The best guesser wins the game.

A variation of this game consists in the quick statement of a number of beans shown in a suddenly opened hand. A variation in ending, is that in which the incorrect statement is followed by a smack on the cheek, which is the penalty. It is amazing to note the proficiency attained by some of these little rascals. It is not to be doubted that the practice proves beneficial to them in after life. Can you not perceive, instantly, the different degrees of perceptive power manifested by the street gamin, newsboy or bootblack, on the one hand, and the Little Lord Fauntleroy sheltered boys, on the other? It is all a matter of practice and response to environment and outside stimulus.

EXERCISE. Many interesting exercises may be based upon the examples given above. There is a wide field for the same. The principle consists simply in placing an unknown number of

small objects before you, then taking a few moments' attentive gaze at them, then covering them over, and writing down on paper the number and details of what you have seen. You will be very clumsy and inefficient at first, in all probability, but you will be surprised to see how speedily your powers increase by persistent practice.

Another form of the same exercise is that of the Houdin feat, in which you pass before a shop window, and then try to remember what articles you have seen therein. You will soon develop a remarkable degree of proficiency. It is interesting to note that Houdin developed this faculty by a preliminary practice with dominoes spread out before him, at which he took a hasty glance, and then wrote down what he remembered of them—the faculty rapidly developed in this way.

An interesting and useful exercise is that of acquiring the ability to instantaneously add up the number of a group of small obpects—marbles or beans, for instance. Begin with one, then two, and so on, until you find your limit. Then strive to add a few more, each day, until your range is a large one. In the same way you may learn the book-keeper's trick of adding several figures at one mental operation—begin with groups of two, and work up. The principle is the same in each case—and each gain in perceptive efficiency also is a step gained in memory training, for the two run together in the task.

A concluding bit of advice regarding these exercises, is that given by old Lurgan Sahib to Kim,

in Kipling's story, in which Kim, smarting under his defeat, asks the secret, and the old man answers that the secret consists in "doing it many times over, till it is done perfectly, for it is worth doing!"

## CHAPTER XX.

## EFFECTIVE PERCEPTION.

Akin to the phases of effective perception, or perceptive efficiency, considered in the preceding chapter, is another phase, embodying the same general principles, but differing somewhat in the particular method employed. I refer to efficiency in observing places, buildings, larger things, etc. The same psychological principles are in operation here, and also the secret of development, viz.: attention-interest, and interest-attention, developed gradually by exercise and cumulative practice, beginning with the simple and working up to the complex—starting with small numbers and working up to larger, and so on.

At this point, I wish to introduce a quotation from Maupassant, who tells the story of how Flaubert taught him to be original in literary expression—you will readily see the application to the subject before us. Flaubert told Maupassant: "Talent is nothing but long patience. Go to work! Everything which one desires to express must be looked at with sufficient attention, and during a sufficiently long time, to discover in it some aspect which no one has yet seen or described. In everything there is still some spot unexplored, because we are accustomed only to use our eyes with the recollection of what others before us have thought on the subject which we contemplate. The smallest object contains something unknown. Find it! To describe a fire that

flames, and a trees on a plain, look, keep looking, at that flame and that tree until in your eyes they have lost all resemblance to any other tree or any other fire. That is the way to become original."

Maupassant adds: "Having, besides, laid down this truth, that there are not in the whole world two grains of sand, two specks, two hands, or two noses exactly alike, Flaubert compelled me to describe in a few phrases a being or an object in such a manner as clearly to particularize it, and to distinguish it from all the other beings or all the other objects of the same race or the same species. When you pass a grocer seated at his shop door, a janitor smoking his pipe, a stand of hackney coaches, show me that grocer and the janitor—their attitude, their whole physical appearance—embracing likewise, as indicated by the skillfulness of the picture, their whole moral nature; so that I cannot confound them with any other grocer, or any other janitor. Make me see, in one word, that a certain cab horse does not resemble the fifty others that follow or precede it."

Can anyone doubt the degree of perceptive power necessary to fulfill the above requirements? Can anyone doubt that the impressions arising from the exercise of such perceptive power would be indelibly printed on the memory of the observer. Can anyone fail to perceive the combined power of interest-attention, and attention-interest, in this work?

There is an entire philosophy of observation and trained perception in the above quotation

from Maupassant. Study it carefully, with concentrated attention and interest, so as to grasp the principle, and to let the same impress your subconsciousness with force. By doing so, it will subconsciously aid you in developing perception and memory.

EXERCISE. Enter a room, and take a careful look around you, endeavoring to perceive and observe as many things as possible that are contained therein. Then leave the room, and write down a list of what you have remembered. After a time, return to the room, and compare your list with the articles in the room. Then go out of the room, and make up a second list, including the old as well as the new things observed. Repeat this a number of times, taking care, always, not to fatigue yourself—take time to rest yourself at any stage of the experiment.

As you progress, note, not only the articles in the room, but also the shape, size, and general form of the room; the location of doors and windows; the location of pictures and decorations; the wallpaper, window shades, fireplace, etc. In short, persevere until you can furnish a complete diagram of the room, as well as a complete list and description of its contents. Try this experiment in your own room, if you like, and discover how little you know, or remember, of its real appearance and contents. Get acquainted with your room, and, at the same time develop your power of perception, and your memory—for that will be the inevitable result.

EXERCISE. Walk along the street, and ob-

serve closely some building which you pass—a house, or shop, or your own residence, for that matter. Then return to your room, and note carefully on paper all that you have observed and remembered about that building. Then, later on, return to the building and make a comparison with your list. Then make a new list, including old and new points discovered, and so on as I have directed in preceding exercises. You will discover that you will have remembered all that you had really observed and perceived—your memory will keep up with your perception, but it can never exceed it, of course.

In this, and similar exercises, you will find it advisable and helpful to proceed from simple to complex—from general aspects to details. You will also find it a great aid to classify as you proceed, making groups and classes of points. For instance, first take in the general appearance of the building, its size, shape and form. Then regard its color-scheme, etc. Then take note of its roof, its doors, its windows, working down to greater and greater detail, and to smaller classes, as you proceed. In short, proceed to analyze your object, and then build it up as a whole from your analysis.

After you have finished your consideration of one building, take up the one next to it, and so on, until you can correctly describe every building on the block. Or, if you like, confine yourself to corner buildings, and thus make a mental geography of any street or locality you may select. You will be surprised to see how rapidly you acquire

efficiency in this work. After a time, you will be able to "size up" a building, fairly well, at a single glance, and almost unconsciously—in fact, many builders, architects, and others who are interested in buildings, do this very thing. The shoemaker takes a hasty glance at your feet, without realizing it, and knows all about your shoes; and the hatter does the same thing regarding your head-gear. Explanation: interest-attention, and practice, until it becomes second-nature, and is performed by the subconscious mind without special prompting.

I venture to assert that you do this very same thing in matters and things connected with the pursuits in which you are most interested—in the interesting, and profitable, things of your own trade, profession, or other occupation. The things which bring you a profit, in money or pleasure, invariably hold your interest and like, and you have no trouble in remembering the circumstances, details and characteristics of the things you like and which pay you. If you like a thing—really **like** it—you are apt to remember all about it without much effort. And you generally **like** that which brings you gain and profit or pleasure.

The study of faces is an excellent training and exercise for the development of perceptive efficiency. The study of the general outward characteristics of persons, their manner of walking, speaking, etc., as well as their clothing, will be found excellent material for exercises of this kind, and will, besides, be of practical value to

you as a general, subconscious habit in connection with the majority of occupations, particularly in such callings as bring you into contact with the public.

EAR-PERCEPTION. As the majority of impressions are received through the eye, it becomes easy to devote more time and space to a consideration of visual perception. But we must not neglect the second great channel of sensation, from which material perceptions are made —the channel of the ear. The same general principles hold good here, i. e., attention-interest, interest-attention, practice, exercise, and general development. Some persons have an excellent eye-memory and a very poor ear-memory. Modern teachers note this difference in children, and adapt their instruction to this condition, at the same time striving to develop the weaker form of perception (for that is what it is, at the last) so as to bring it up to the level of the stronger form. It is an excellent thing to combine the two forms of perception, and thereby to obtain a double set of memory impressions. For instance, by repeating a name, and at the same time writing it down and then reading it, the chances of remembering the name are greatly increased.

Many persons manifesting aural perception below the average, are apt to think that they have deficient hearing. In many cases, however, this is a mistake, for the trouble arises simply from a lack of attention and interest—a poor condition of memory of ear-impressions naturally follow-

ing in the train. Many persons fall into a habit of inattention to what is being said to them, allowing their attention to be caught up and attracted by visual impressions. This is often excused on the plea of "poor hearing," "slight deafness," etc. These persons may not perceive ordinary remarks made in a loud tone of voice; but they will catch the slightest whisper of others, if they think that the other persons are gossiping about them, or whispering a secret—Oh, yes! no trouble in hearing **that!** Such persons also manage to catch the faintest murmur of the voice of love, or a whisper concerning some money affair—not the least trouble about **that!** And they will **remember** these low-toned impressions, too—forget it not!

A well known physiologist once said: "It cannot be doubted that fully one-half of the deafness that exists is the result of inattention." And a well-known English psychologist has said: "What is commonly called deafness is not infrequently to be attributed to inattention—the sounds being heard, but not interpreted or recognized. Sounds may be distinctly heard when the attention is directed toward them, that in ordinary circumstances would be imperceptible; and people often fail to hear what is said to them, because they are not paying attention."

I personally know a very excellent lady who constantly complains that "something must be the matter with me, for I cannot remember a thing that is told me—my memory must be failing!" But, one observing her expression of

countenance when she is listening (!) to the conversation of others can see at once that she is paying little or no attention to what is being said to her.

I once played a rather mean trick upon this lady—purely as a matter of scientific interest, however. In the midst of our conversation, I injected a French "nonsense verse," uttered in a monotonous, solemn, emphatic tone—the verse was something like "Mother Goose," only still more ridiculous. The good lady, replied, looking at me earnestly: "I perfectly **agree** with you, Professor—in fact, I have **always** held that view." A few moments later, I lowered my voice, and attracting her attention, told her a little bit of spicy gossip about a rival of hers. **She heard every word distinctly, without the slightest trouble,** and answered me quite intelligently! Take a hint from this, O student!

EXERCISE. Here is the secret of developing ear-perception, in a sentence. Use your ears—practice, exercise, and observe—with interest-attention, and attention-interest. Study tones, expressions of voice, accents, inflections, etc. Endeavor to mimic and imitate peculiarities of vocal expression—never imitate a stammerer, however, for this trick is "catching." Your growing interest in the subject of vocal expression, will attract your attention, and your memory will develop as a consequence. Perception and memory always go hand-in-hand, remember.

Practice in the direction of "picking up" scraps of conversation of passers by on the street, and

afterwards repeating them to yourself. Follow the same course in attending lectures, church, and the theatre—try to see how much you can remember of what was said, in the exact words if possible. Listen carefully to what is said to you, with the fixed idea of recalling the exact words afterward. Also study persons' voices, so that you can identify an unseen person by his voice previously heard by you.

In short, TAKE AN INTEREST in ear-perception, and develop it by practice, just as Kim developed his eye-perception and memory. The principle is the same. Take an interest in the work, and practice diligently. If you will do this you will develop an ear-perception and memory far above the average, even though you are notoriously deficient in this respect at the present time. Interest, Use, Practice, Exercise—these mean gradual and certain development of any part of the body, or any faculty of the mind. Nature has a few general laws and principles, capable of an infinite variety of application. Master these laws and principles, and you may develop yourself to almost any extent, if you will pay the price of time, work, and patience. The one thing to be remembered in ear-perception is: Beware of In-Attention—cultivate Attention!

## LESSON XXI.

## POINTERS ON PERCEPTION.

I wish to call your attention to a number of "pointers" (to use the very expressive American term) regarding the principle of perception. These little aphorisms of memory training are based upon well-established principles of psychology, and the student who has carefully studied the preceding chapters will have no trouble in understanding the scientific reason underlying each of them. I have added a little explanatory note to each pointer, which may serve to throw additional light upon it.

POINTER I. **The facility of recollection depends upon the degree of clearness and strength of the impression.**

The student should remember this very important fact of memory, for it lies at the very foundation of the subject. The impression upon the memory is akin to the impression upon the phonographic record, or upon the photographic film. A faint impression can never bring forth a reproduction stronger than itself. A blurred impression will result in a blurred recollection. Impressions are the raw material from which recollections are manufactured. It has been said that one "cannot make a silk-purse from a sow's ear," nor can a thistle bear plums. Like produces like. To be able to recall anything clearly, easily, and correctly, there must first exist an impression capable of such efficient reproduction.

POINTER II. **The depth and clearness of an impression on the memory is in direct proportion to the interest-attention, and attention-interest bestowed upon the subject or object producing the impression.**

The principle underlying this pointer has been fully explained in the preceding lessons of this course. There is no impression without attention; and attention depends materially upon interest in, and a liking for, the subject or object producing the impression. I have repeatedly told you to cultivate interest in the things which you wish to understand, know, and remember. Interest may be stimulated by concentrated attention. Also by habit. Also, in a secondary way, by attaching the thought and idea of the uninteresting thing to some pleasant and agreeable thing which will result from the mastery or performance of it. One may grow to take an interest in dull, dry work, by connecting it in mind with the pleasant things which will result from it. Interest may be kept up by frequent thoughts of the financial reward to accrue from the work, or similar gain of pleasant things. Connect the un-liked thing, in mind, with likable and liked things, and thus gain this secondary interest.

POINTER III. **Build a strong primary foundation impression of a thing to be remembered, for subsequent impressions must be built upon and around it.**

All good teachers of memory agree upon the idea that it is of prime importance to fix in the memory a good, strong, clear primary impres-

sion. This primary impression must serve as a foundation upon which the structure of subsequent impressions must be built. When you remember a thing, you really remember a series of impressions about it, as a rule. The primary impression has been added to from time to time. Be careful of your foundation work. Let it be strong and firm, and well sunk into the substance of your memory. A weak foundation may wreck a promising structure, in time. Try to build a good strong, broad structure of an idea in the memory, for it may be needed to support quite a large superstructure of added details, facts, and associations.

POINTER IV. **Let your primary impression consist of main facts, points, principles, form, characteristics, etc., avoiding too many unimportant details, for the moment.**

If you wish to build a house you place great large stones in the foundation work. In the same way, in taking impressions for the purpose of knowledge, study, or memorizing—the three really are one, however—you should select the "big facts" for your primary work. Or, to change the figure of speech, you should draw in memory the broad, wide outlines of the thing, into which you can fill the little details in subsequent impressions. In committing to memory the picture of a house, begin with its general outline and appearance, and then fill in the details of the picture. If you wish to memorize a tree, you should first see it as a whole, then study its trunk, then its branches, then its twigs, leaves, etc., in natural

order. If you wish to remember a certain family, you think of them first as a whole, and then of the individuals composing it. If you wish to study a new subject, do not seek the most technical and detailed work on the subject—these are intended for advanced students—but begin by reading some elementary, "general" work on the subject—a good encyclopaedia will give you this kind of start—and then work up to the details and fine points. But, be sure to have your general, "big" picture, as clear, strong and distinct as possible, in accordance with the rule of primary impressions previously stated.

POINTER V. **Classify your impressions of details into divisions, sub-divisions, and still smaller ones—make your whole impression consist of classified parts; your unity composed of units.**

This pointer is in accordance with an important psychological law, which is true of all planes of thought activity, including memory. Knowledge properly classified is available knowledge. An idea of memory, properly classified as to the details composing it, becomes available, and is easily handled by the mechanism of recollection. This results in a very clear composite memory image—and most of our mental images are composite, being made up of many parts and details. Without classification of this kind, the mental image of a thing is more or less blurred and cannot be recalled properly for use and efficient service. Remember this important law of the mind,

for it is as true of the smallest thing as of the largest.

POINTER VI. **Original impressions may be intensified by frequent revival in consciousness.**

This pointer brings to our attention a very interesting law of memory. This law so operates that when you revive, or recall in consciousness, a previously acquired original impression; or an original impression subsequently added to, which really forms a group impression; you actually intensify it, causing it to become deeper, and stronger, and therefore much easier of recollection. This principle forms the basis of some of the most important rules and systems of memory training. It is by an observance of this principle that we have memorized the alphabet, the multiplication table, and many other familiar features of our early education. It is the principle underlying the frequent "review" work of all educational systems. A little thought will show you that the majority of things that you have really learned perfectly, you have acquired in obedience to this great law of the mind. The great feats of memorizing, which astound the public, are the result of the application of this principle. By it were committed to memory the contents of great books, as mentioned in the earlier lessons of this course.

A familiar application of this principle is the well-known illustration of remembreing the features of a new acquaintance. It is a fact, that even if you spend an hour with him at the first interview, you may fail to recognize him the next

time you see him; while, if you see him twelve days in succession, for only five minutes at a time, you will feel that you know him very well indeed, and will have no trouble in remembering him thereafter. The frequent revival of the impression of a popular song may become a nuisance, so intensified does the impression become.

POINTER VII. **In reviving impressions, do not be content with merely repeating the perception of the object itself; but also review and revive the impression in consciousness, without reference to the original object.**

It is of course a great benefit to re-study an object, for the purpose of intensifiying your original impression of it. In this way the impression is strengthened, and you also add new details of impression by this reference to the object—you really educate yourself on the subject, in this way. But this form of revival of impression, important though it be, will not begin to do the same work of memory training that is performed by the simple revival in consciousness of the original impression, without reference to the object itself. The memory grows much stronger from the reproduction of the mental image of the thing than it does from a re-perception of the thing through the channels of the senses.

The above fact is explained by the statement that a memory image develops and becomes strong by USE, just as does any other part of the body and mind. By exercising a part of the body, or a faculty of the mind, you expand and strengthen it—the same rule applies to the mem-

ory image or impression. An illustration of the principle stated in the pointer before us, is that of two boys learning the multiplication table. The first boy refers to the printed tables, whenever he wishes to know how much is "seven times eight," or "five times six." The second boy reviews his memorized work, and, whenever he wishes to know the product of 7x8 or 5x6 he recalls the memorized rule and applies its principles in practice. Or, again, consider the difference between the two persons wishing to spell correctly; the first refers to the dictionary without any effort to draw on his memory—the second uses his memory, and refers to the book only when actually "stuck." Which class of boys will acquire the best memory for the work of multiplication of figures, or spelling of words—which will have the best memory impressions on these subjects? Can you doubt the answer?

The best way to intensify the impressions in memory, and to acquire a clear, strong, full idea of the remembered thing, is (1) to revive the impression in consciousness, thus by the act of recollection recalling all possible regarding it that was observed—and noting the same on paper (the use of the pencil greatly facilitates the recalling process); then (2) refer to the object itself, comparing your recalled list with the thing, and seeing what you have omitted—also adding new impressions to the old one, as the result of the new examination. This plan will not only strengthen the original impression, but also will add to the clearness and strength of the new

ones, according to the rule of association, which tells us that it is of advantage to add the impression of a new thing to the previously acquired and remembered impressions of the old thing. Remember the idea embodied in the old school-room adage: "An unrecited lesson is soon forgotten," the recital is review work, intensifying the original impression.

POINTER VIII. **In impressing a new thing on the memory, endeavor to link and associate it with as many old impressions as possible, for each link of association is one more "loose end" by means of which you may recall it.**

This is another form of the application of the principle of Classification. We shall consider it in detail when we take up the Principle of Association. It is well to cultivate the habit of quick preliminary classification, which may be followed by careful association when the subject is reviewed in consciousness.

POINTER IX. **Impress an object, or subject, upon the memory by as many channels of perception as possible.** If you are weak in any particular form of perception, rivet the impression received through this weak channel by means of another impression of the same thing received through a channel of a stronger form of perception—clinch the weaker by using the stronger in connection with it.

This pointer is based upon a good psychological principle. Experience proves that, in many cases, the impression is greatly intensified if composed of perceptive reports arriving through dif-

ferent sense-channls. For instance, the majority of persons find it easier to remember names, numbers, etc., if they also are able to read them at the time they hear them spoken. Many persons have a habit of writing down names, numbers, etc., which they wish to memorize, after having heard them spoken—the written memorandum then being destroyed. There are three senses involved in such impressions, viz, (1) the sense of hearing; (2) the sense of sight; and (3) the sense of muscular motion which is a form of touch-sensation. The first two are more familiar to you than the third; in fact many overlook this third form of perception. But the memory is often very keen to receive and recall the impression of a muscular motion once performed —in fact, we could not write, walk, skate, use the needle, knife and fork, or the typewriter, did not the memory act in this way. We learn to perform motions of this kind by the use of subconscious memory, after the first attempt to perform the motion. You will find this tri-sense form of perception to be a great aid to you in memorizing names and figures—sound, sight, and touch are called into action in the impression.

In the same way, it is found to be an advantage to **visualize** the thing, the name of which you wish to remember. If you are asked to memorize a list of different articles, such as desk, chair, inkstand, etc., you will receive a stronger memory impression if you will make a mental picture of the article as it is named, as well as receiving an impression of its name. If the ob-

ject is in sight, look at it while you repeat its name, and you will register a double impression. As the pointer states, this principle is also available in cases in which a weak form of perception is strengthened by an impression from a stronger perceptive faculty. For instance, if your eye-perception is weak, and you are required to memorize a printed word or sentence, you may clinch the impression by reading the word or words aloud, or by having them read aloud to you by another. Reversing the process, you should write down spoken words, if your ear-perception is weak. Even the sense of smell and taste may be used in this way, in special cases. One might fail to remember the name of **Fromage de Brie** (Brie Cheese), from mere sight or sound of the name. He would be very much more likely to recall the name if he were given the opportunity to receive impressions from the sense of smell at the same time. No one who has ever experienced the taste of Quassia is ever likely to fail to recall its name when thinking of it—its name is impressed in connection with its bitter taste.

Nearly every school teacher knows of cases in his or her own experience, in which a scholar was able to spell or to perform problems in mental arithmetic correctly, by reason of being able to visualize the printed word, or previously worked out problem, by eye-memory, where the ear-memory, and memory of mental calculation were weak. I once had a pupil, who was also a medical student, who was preparing for his examination. His memory for names was rather weak,

but his eye-memory was very strong. I fixed in his mind the names of the principal muscles of the body, and the bones of the human skeleton, by causing him to mark the names in bold black letters on his chart, and then making a clear, strong mental image or **visualization of the charts so prepared.** When his examination day arrived, he simply called up his visualized mental picture, with every muscle and bone bearing its proper label, and lo! he was practically letter perfect in those particular branches. I had arranged tables of certain other subjects for him, by a simple though complete form of classification, and the result in this direction was also very satisfactory, for he was able to visualize my charts, and get his answer from them. I may add that this man afterward became a very proficient young surgeon, his extraordinary eye-perception and eye-memory causing him to detect and remember physical details which escaped the sight and memory of others.

POINTER X. In impressing a thing upon the memory, by means of associations, endeavor to make the association with as many things you "like" as possible. Place it in a "pleasant" class of associated things, for by so doing you will find it easier of recollection. If you are fond of religious subjects, see if you cannot tie your perception of the thing to something of a religious nature. If you are fond of the dance, or theatre, make the association accordingly. In this way you can make an uninteresting thing take on an

unsuspected interest, by reason of the association. Consider this in connection with Pointer II.

POINTER XI. Endeavor to impress the name of a thing upon your memory, as well as its characteristics. The naming of a thing is a positive act of the mind—a distinct step in forming a concept—and it will serve to rivet the general impression of the thing itself. Realize how difficult it would be for you to even "think" of certain things without naming them in your mind—the same principle holds good in memorizing-impressions. A name is the crystallized concept of a thing—the memory of a thing is frequently, and usually, found to be crystallized in the memory of the thing under its name-impression as a centre, its characteristics being grouped around it. Therefore impress the name of a thing upon your mind, if you would remember the thing itself. If it has no name known to you, coin a name for it. "A rose by any other name would smell as sweet"—and will be remembered as well.

## LESSON XXII.

## EFFICIENT ASSOCIATION.

As I have repeatedly informed you, this great second principle of memory—the Principle of Association—plays a most important part in the process of recollection and remembrance. It is second only to the Principle of Attention. As the best psychologists have discovered, voluntary recollection is possible only when the memorized thing is connected with, linked to, or associated with other memorized things. The greater the number of such associations, the greater the probability of its recollection when required. Beattie well sums up the matter when he says: "The more relations or likenesses that we find or can establish between objects, the more easily will the view of one lead us to recollect the rest." Arnott says: "The ignorant man charges his hundred hooks of knowledge with single objects, while the informed man makes each hook support a long chain to which thousands of kindred and useful things are attached." Others have advised that each idea be "entangled" by threads of association to many other related ideas, so that the recollection of one will bring to light the rest, if they are needed.

In the earlier lessons of Association, I have described the association of contiguity in time and space. Our present consideration is that of contiguity in consciousness, by relations of likeness, etc. For the reason that we have seen, we should

endeavor to associate the thing to be remembered, with as many related and similar things as possible. Or, if you prefer this illustration, it may be said that we should endeavor to view them from as many angles—as many view-points —as possible. The more we know about a thing, the more easily is that thing recalled in memory.

Many elaborate schemes and systems of artificial association have been devised, and while each of them probably contains some ideas of merit the most of them are too cumbersome, artificial and strained to be of much practical use. For instance, some of these systems teach long chains of words, each associated with the one preceding, and the one following it; the idea being that by memorizing these chains of words, one may travel along this course and recall the desired word. For instance, in some of these systems the following artificial and strained associations were taught—the examples are actually given in these systems, as amusing as they may seem to the student of rational memory training. Here are the examples—study them carefully, O, student; and see what you have escaped:

Example I. "**Chimney**—smoke—wood—tree —**leaf.**"

Example II. "**Pillow**—feather—quill—pen—**ink.**"

Example III. "**Apple** — windfall — wind — storm—wrap well—**Apfel.**"

The first two are so far fetched as to need no comment—surely one could connect Chimney and Leaf, or join Pillow and Ink, without this

chain. As for the third, which is supposed to furnish an easy way to teach the English person the German word for Apple—this in the words of our American cousins, "is the limit." Does not Apple, itself, suggest Apfel, much more readily than this cumbersome chain? Surely the learning of a new language has sufficient terrors, without adding strange and frightful ones in the form of such a "system!"

Imagine trying to memorize a list of names or articles in this way! Such methods remind me of an attempt to reach London from Paris, by traveling **eastward** through Europe, Asia, the Pacific Ocean, through America, the Atlantic Ocean, Ireland, England, and thus at last reaching London, Hurrah! This may be a delightful trip if one has the time and money—but for ordinary purposes, I prefer the usual trip across the Strait of Dover, with its little railway journey at each end. Imagine trying to reach a point directly across the street, by deliberately turning your back upon it, and then traveling around the world in the opposite direction from it, with the idea of approaching it from the rear! These systems are equally as ridiculous, to my mind.

Before leaving the subject, I ask you to consider a few lines from a satire on these cumbersome systems of memory, which appeared in the magazines a few years ago. In the story, a man tries to remember the name of his sweetheart in this way, as per the "system" he has studied—listen to him: "Girl—dress—dressmaker—sewing — thread — spool — cotton — cotton-mill —

spinner — bobbin — bob — Rob — Robert — **Roberta!"** Roberta was the girl's name. Eureka!

The story, however, goes on to say that in time the young man fell in love with another girl, whose name he remembered as follows: **"Girl** — dress — dressmaker — sewing — thread — needle—pins—Pinafore—**Josephine!"** And thus he remembered his beloved Josephine.

The sequel is unhappy, however. He gets his associative chains twisted, and proceeds to address Josephine as "Roberta." Tableau! I do not think that you require any instruction of this kind, dear students. You may easily invent chains of this sort, to amuse yourselves, if you wish—but not for the purpose of memory training, I beg of you.

There are, however, a number of forms of artificial association, some of which may be applied at times, as "pegs" upon which to hang little bits of memorized things. I shall mention these in their proper place. At present, however, I think it better to proceed to a consideration of the best and most scientific methods of real, logical methods of efficient association. These methods are based on actual psychological principles, and are as real as the mind itself. They follow Nature's own laws, and are in the line of all real acquisition of knowledge by the use of the memory. An observance of these laws strengthens the mind and memory, instead of weaking them as do many of the extremely artificial systems, such as those I have just mentioned.

These methods of efficient association, may be grouped into three general classes as follows:

I. Analysis.
II. Comparison.
III. Synthesis.

I shall now ask you to follow me in the consideration of these three great classes of association in memory. I shall point out the practical methods of application, of course, as we proceed. But you must know why you are doing a thing, as well as being told how to do it, if you wish to become really efficient and proficient in the subject.

ANALYSIS. Analysis may be defined as the process by means of which anything is resolved into its original parts, usually including the examination of such constituent parts. It is the dissection of a thing; the taking apart of its component parts; the setting aside of its properties, qualities and attributes. In short, it results in the examination of a thing's parts, and the perception of the thing as composed of these parts —rather than the perception of the thing as a solid whole.

It is axiomatic that we can know a thing more fully if we have analyzed it into its parts or qualities. And, it is equally axiomatic that the better we know a thing, the better do we remember it. Therefore, it is seen that by analyzing a subject, or object, which we wish to remember, we are taking the best steps toward impressing it upon the memory. And, I need scarcely again remind

you that by associating it in memory with its many component parts or qualities, we are making it easy for us to recollect it by means of the many associative "loose ends" of memory. In short, we are indexing and cross-indexing it very thoroughly in this way, so that we may find it catalogued in memory under many headings.

One of the leading principles of many modern "memory systems," is that known as Interrogative Analysis. To listen to the glowing descriptions of this principle by some of the teachers, you might imagine that they had **discovered** this principle. But, as all students of the subject know, or should know, the principle is as old as the science of teaching, and its value has always been recognized by the best minds of the race. It was the keynote of the teaching method of Socrates, who was born 468 B. C.

Socrates taught philosophy by asking questions of his pupils, and thus drawing out their knowledge on the subject, and at the same time opening the way to the creation of more knowledge by stimulating the mind to activity in the direction of filling out the idea of things which were outlined by his questions. It is noteworthy that the pupils of Socrates were also renowned for their excellent memories—just what might have been expected, when we remember the laws of association by analysis.

There have been many ingenious plans of interrogative analysis arranged by teachers, but many of them are too cumbersome for efficiency. The best results are obtained by the more simple

rules and methods. In its simplest form, interrogative analysis may be illustrated by the simple analysis of a verse, or Biblical quotation, which one may wish to remember. This process proceeds as follows using the familiar opening lines of Scott's "Lady of the Lake" as an example:

"The stag at eve had drunk his fill,
Where danced the moon, on Monan's rill;
And deep his midnight lair had made,
In lone Gletartney's hazel shade."

The interrogative analysis would proceed as follows: Q. **Who** is the actor? A. The stag! Q. **When** did he act? A. At eve! Q. **What** did he do? A. (a) Drank, and (b) made his lair! Q. **Where** did he do these things? A. (a) he drank from Monan's rill, and (b) made his lair in the shade of Gletartney! Q. **How,** or in what manner? A. (a) he drank his fill, i. e., drank deeply and fully; and (b) he made his lair deep, for his night's rest. This may be analyzed still further, if desired, as follows: Q. Describe Monan's rill! A. Its waves were in motion, and the moon was reflected from its dancing waves! Q. Describe the scene in Gletartney's shade! A. It was a lone, quiet, secluded place, and with deep shadows falling from its hazel trees, beneath the light of the moon!

From another angle, the analysis may be made as follows: Q. What idea does each line convey? A. (1) The stag drinking his fill at eve;

(2) the scene of his drinking—Monan' rill, with the moon dancing on its waves; (3) the deep midnight lair, made by the stag, following the draught at the rill; and (4) the scene in the lone shade of the hazel trees of Gletartney! The mind can readily picture each of these ideas.

Try the experiment of first merely reading these lines aloud, and then reciting them slowly, with the above analysis in mind. You will find that the first recitation merely "scratched the surface" of your memory, whereas the second made a comparatively deep impression. In fact, it is extremely probable that you have impressed the lines themselves upon your memory, by simply making the above analysis, and mental picture. At any rate, you will remember the picture, clearly, and for a long time, from having merely made it once in this exercise. Try the principle on other verses which may occur to you—the following from Ella Wheeler Wilcox, for example:

"Laugh, and the world laughs with you;
Weep, and you weep alone!
For this sad old earth
Is in need of mirth—
It has troubles enough of its own."

In the same way, the favorite method of Biblical verse analysis has proved of the greatest assistance to many clergymen and priests who

have followed it. Apply this method to the following quotation:

> "For God so lived the world, that he gave his only begotten son, that whosoever believeth in him shall have everlasting life."

Q. Who? A. God! Q. What? A. He loved! Q. He loved what? A. He loved the world! Q. How much did he love the world? A. So much that he gave his son! Q. What son? A. His only begotten son! Q. For what purpose did he give his only begotten son? A. That whosoever believeth in him shall have everlasting life! Q. Who should have everlasting life? A. Whosoever that believeth in him! Q. What kind of life? A. Everlasting life! Q. Why shall whosoever that believeth in Him have everlasting life? A. Because God gave his only begotten son for that purpose! Q. Why did God so give Him? A. Because he **so** loved the world! Now re-read the verse in the light of the analysis, and see how much clearer it is in the memory and understanding, than before.

I know of no better, simpler system of applying the above principles of interrogative analysis, than the familiar set of questions to be so applied, as follows:

## THE SEVEN QUESTIONS.

(1) Who?
(2) Which?

(3) What?
(4) When?
(5) Where?
(6) Why?
(7) How?

The two first questions bring out and establish the identity of the person or thing; the third brings out the action to or by the person or thing; the fourth and fifth, the place and time, the sixth the reason or purpose, and the seventh the manner of the action. This apparently simple code of questions will bring out a wealth of detail regarding any event, person, or things, and will serve to fix it in the memory as a more clearly understood thing. Each question is the key to a host of associative impressions. I again remind you that the use of a pencil in noting down the information that you draw forth from yourself in this manner, will aid you materially in this work.

HIGHER ANALYSIS. There have been designed a number of tables, or systems of higher or fuller analysis than the Seven Questions, all operating on the same principle. The following is the one which I have adapted, and used in my personal class work here in Paris. It answers the purpose better than any other form I ever have employed:

( 1) Name of Person or Thing?
( 2) When did it exist?
( 3) Where did (or does) it exist?
( 4) What caused it to exist?

( 5) What is its history?
( 6) What are its leading characteristics?
( 7) What is its use and purpose?
( 8) What are its effects, or results?
( 9) What does it prove or demonstrate?
(10) What is its probable end or future?
(11) What does it most resemble?
(12) What are its opposites?
(13) What do I know about it, generally, in the way of associated ideas?
(14) What is my general opinion regarding it?
(15) What degree of interest has it for me?
(16) What are my feelings regarding it—degree of like or dislike?

This system will bring out of your mind a surprising volume of information, and will also serve to impress the thing firmly and clearly upon your memory by hundreds of associative links. Prove this by applying it in earnest, and you will perceive the principle and realize its possibilities.

## LESSON XXIII.

## ASSOCIATIVE EFFICIENCY.

As we have seen in the preceding lesson, Analysis, the first method of efficient association, in memory training, is followed by a second method—that of Comparison.

COMPARISON. Comparison consists in the examination of two or more persons or things for the purpose of discovering resemblances or differences between them. It follows, of course, that before we can compare two things for resemblance or difference, we must first analyze them in order to discover their characteristics—the little things which make the whole thing that which it is. The comparison, then is seen to be a comparison of the discovered characteristics of a thing—a step following close upon the heels of analysis. It has well been said that human thinking consists principally in (a) analyzing things for their characteristics; (b) in comparing these characteristics with those of other things; and (3) in classifying things according to the resemblances and differences in their respective characteristics. And, I ask you to note that these three steps also give us the key to efficient association in memory.

In analyzing a thing, we discover that it has many characteristics—qualities, properties and attributes. We then find, by comparison, that other things have characteristics differing in degree, or kind, from those of the first thing. When

the characteristics of two or more things are near in kind or degree, we say that the two "resemble" each other. Likewise, when we find that the two or more things are far apart in the degree, or kind, of their characteristics, we say that they "differ" from each other.

There is a vast range of degree in the difference, or resemblance, between things. At the last, resemblance and difference may be said to be wholly a matter of degree—for, strictly speaking, everything has a degree of resemblance to every other thing, and also a degree of difference from it. For instance, while in a flock of a thousand sheep each individual sheep resembles every other individual sheep in a degree—yet it also differs from every other, in a degree. Every blade of grass has points of resemblance to every other blade, and yet each differs from every other blade—all a matter of degree, in either case. Again, there is no such thing as absolute heat, or absolute cold. Things have degrees of heat—each degree a little hotter than the one lower in the scale, and each colder than the one above it. The same is true regarding the other qualities of material things, such as hardness, weight, density, brittleness, etc.—all a matter of degree. In the same way, the mental qualities may be treated. It is a far cry from courage to cowardice, and yet the steps between them are but degrees. There is a great difference between love and hate, yet the steps between them are but degrees.

Philosophers have sought to group things in

pairs of opposites—in contradictories, as the logicians call them. Things are said to be opposites or contradictories, when their characteristics are so far removed in degree from each other that the thing cannot possess both at the same time. For instance: hard and soft; high and low; wide and narrow; large and small; straight and crooked; up and down; far and near; etc., etc. But these differences are seen to be but degrees in a scale of qualities. Therefore, comparison of things according to degrees of a given quality, consists in giving each its proper place in the scale.

RESEMBLANCE. For the purpose of efficient association in memory, it is found well to link the thing to be remembered to other things already in the memory, by means of points of resemblance. If we see a new animal, for the first time, we naturally associate it in our memory with the known animals which it seems most to resemble. For instance, the guinea-pig is not a "pig" at all, but was so called simply because its shape resembled that of a tiny pig. In the same way, a whale is generally considered as a fish, because it swims in the water, and has something like fins—whereas, in reality, it is not a fish at all, but a warm-blooded mammal, suckling its young—it is nearer to a seal than to a fish, though the first resemblance impresses one more forcibly at first sight. To the child a lion is a big cat, and a bear a big dog.

Children frequently consider cows as "big bow-bows," when they first see them; or per-

haps mistake them for horses, because they stand high, and have four legs. Egg-plants are called so, because of their shape-resemblance to the egg. Peanuts have their name, because they are contained in a pod like a pea. Automobiles were first called "horseless carriages," because they were simply carriages lacking the usual horse attachment. The word "lamp" originally meant a torch, then a wick-burning vessel connected with light-giving, and now is often used in connection with the electric light, simply by reason of the perceived resemblance of the latter to the old oil lamp. Slang frequently arises from some odd perception of resemblance, as for instance, the Apache of Paris, calls his cap, a "lid;" and his sweetheart's eyes, her "lamps."

In memory association, you should consider the thing to be remembered clearly, in the light of comparison, with as many other known things as possible. Link it with things resembling it in appearance, in size, in color, in use, in general history, in time, in place, in the relation of cause and effect, in degrees of hardness, toughness, brittleness, etc. In short, associate it with as many things as possible that it "is like" in any way. The better and longer you have known the thing "like" it, the better for your purpose—for **the unknown thing must always be linked to the known,** and the better known the better it is for the purpose. If the thing is one principally concerned with the sense of touch or feeling, let it be associated with the things it is most "like" in the way of touch or feeling. If it is a thing best

perceived by sight, then link it to the things nearest "like" it in appearance. If it is perceived by the hearing—the sound of a name, for instance—connect it with the things that sound nearest "like" it—something that rhymes with it may help in the matter.

DIFFERENCE. In a way, the perception of resemblance is, to an extent, a perception of difference. This, because, as we have seen the matter of resemblance and difference is largely a matter of degrees on a scale of quality. But, ignoring this fact for the moment, things may be said to class themselves into "pairs of opposites" or groups of contradictories. So true is this that the trained mind almost instinctively sets up the idea of an "opposite" at the same time it is considering a particular thing, quality, or idea. It thinks of this opposite, or contradictory thing, not because it is "like" the thing under consideration, but simply, and solely, because it "is so different." This is illustrated in the slang phrase, common both to French and English "men on the street," which relates that "he reminds me of Napoleon (or Washington)—because he is so 'different'!" The fact that this expression is usually used in derision, or ridicule, does not alter its truth or value—for it is based on a well-established psychological principle. The fact that this principle is so well-grounded in psychological fact, should be sufficient reason for us to employ it in forming efficient associations in the memory. It is equally as valuable as its opposite, the association of resemblance.

In this form of association, you fix the idea or fact in the memory by comparison with another idea or fact as far different from it as possible—its "opposite" or contradictory. The greater the degree of opposition, or difference, the greater the value of the association of this kind—just as in the previously mentioned form of association, the greater the degree of resemblance, the greater the value of the association. The philosophy of this apparent paradox is very simple. It is based on the idea that the most valuable of associated ideas is that which lies at one extreme or the other of the scale of resemblance—the middle-ground idea has the least associative value.

A very warm place is remembered easily in connection with another very warm place; or, equally well, in connection with a very cold place—the first by its close resemblance, and the second by its extreme difference. Mention a celebrated giant, and the mind first recalls the ideas of other giants, and then flies to the other extreme and thinks of celebrated dwarfs. A very fat man suggests (a) other fat men, and (b) very thin men. In neither of the above instances is the memory likely to recall men of average stature, or average weight. This is a peculiar law of memory, but is valid and well-grounded and should be taken advantage of in memory training, by combining the two forms of comparative association—likes and unlikes.

CAUSALITY. There is a form of comparison, and comparative association, moreover,

that may be said to combine in itself the phases of difference and similarity in another form of arrangement than that of degree in the scale. I allude to the relation of cause and effect, using these terms in their broadest and least technical sense. In this sense, the egg is the cause of the chicken, just as a chicken is the cause of the egg —"cause" being regarded as "the thing that led up to it." Lightning, in this sense is the cause of thunder. This form of association by comparison is very efficient. It is very easy to remember chicken or bird when you think of an egg, or vice versa. Parent suggests child, and vice versa. Lightning and thunder travel in mental pairs.

But one should be careful not to make false associative relations of this kind. For instance, high-hats are not the cause of civilization; nor is the cock-crow the cause of the dawn, though our friend Chanticleer so associated them. But even these false relations serve to associate things in memory, as in the case of the cock-crow, which is always associated in our mind with early morning. The relation of Causality may be compared either as Resemblance, or as Difference—either as a thing "very like," or as an "opposite," or, better still, as both.

GENERAL COMPARISON. The most common points of comparison for resemblance and difference, may be stated as follows:

Name. Place. Time. Shape. Cause. Effect. Use. Actions. General Idea. History. Origin. Destination.

Apply the test of comparison for Resemblance and Difference—Like and Unlike—to each of these points regarding a thing, and you will have built up a strong web of associations in which to entangle your thing or idea, besides having at the same time, built up quite a valuable store of information and knowledge around it. Any one of a hundred lines of thought will then serve to bring it into your recollection, and thus add constantly to the depth and strength of its impression on your memory, in accordance with the principle of repetition.

## LESSON XXIV.

## SYNTHETIC ASSOCIATION.

We have considered the first two methods of efficient association, namely (1) Analysis, and (2) Comparison. We now pass to the third, known as Synthesis.

Synthesis is the reverse or opposite of Analysis, for the former serves to build up, combine and generalize, whereas Analysis tears apart, separates, dissects, and particularizes. Synthesis may be defined as "the putting of two or more things together." In the sense in which we now use it, the term may be said to mean Classification, or Generalization.

It is a well-known principle of psychology that things may be forcibly associated in memory by reason of being grouped into logical, and natural classes, families, divisions, etc. This is akin to the placing together in the same compartment, drawer, or envelope, of things closely resembling each other. The receptacle is also generally found immediately adjoining one containing the things as nearly opposite as possible—in accordance with the rules just described. This being so, it follows that the man of trained mind and memory will have acquired the habit of careful classification, and synthesis. This characteristic, by the way, is almost always found in the cases of men of the scientific mind, not only in science proper, but also in the professions, trades and business life. The efficient man in any walk of

life, is generally found to be possessed of the scientific habit of classification, grouping, and mental-filing methods.

A leading writer has said on this subject: "The man who has not properly classified the myriad individual objects with which he has to deal must advance like a cripple. He, only, can travel with seven league boots, who has thought out the relations existing between these stray individuals and put them into their proper classes. In a minute, a business man may put his hand upon any one of ten thousand letters, if they are properly classified. In the same way, the student of any branch, can, if he studies the subjects aright, have all his knowledge classified and speedily available for use."

A leading lawyer once said: "It is not so much a matter of knowing the law on a subject, as it is of knowing where to find that law." This is the secret of many an efficient memory. Such a memory is divided into sections, divisions, and subdivisions—and these linked by association with others, until the whole is a wonderful system of classified order and efficient grouping, the contents of which are speedily and easily available, with the minimum expenditure of effort and time.

I strongly advise my pupils to make a written chart or diagram of any subject with which they wish to familiarize themselves, placing each important division of the idea in its proper place, and its proper and logical relation to other divisions. The mind will then take up the impres-

sion of such a diagram, and will reproduce the arrangement in memory. The preacher or lawyer does this in preparing his sermon or argument, and actually "sees" these divisions in his mind's eye when he begins to speak, and all through his discourse. The efficient salesman does the same thing, and thus gets the best result of his work. Students will find this idea invaluable to them in preparing for examinations, or in impressing upon their memories the knowledge they acquire during their attendance at school. Efficiency in almost any line of mental work, consists in "diagraming" the knowledge acquired by experience and study.

Just as the operations of the mind may be classified into three groups, viz.: (1) Feeling; (2) Thinking; and (3) Willing—these, in turn, being subdivided—so may any subject so be classified to advantage, and its contents grouped into logical groups and "bunches," each with its proper label. When one needs any fact, idea, or bit of information on a subject so arranged, he has but to go to the proper division, and pull out the proper drawer, and there, in the proper part of that little drawer, will be found the particular thing required. The card-index idea may well be applied to the memory, and put to the best use therein.

The proper rule for classification, of course, is to put things together in the order of their degrees of resemblance—with a cross reference to their "opposites," as I have said before. The same thing may be placed in several classes—in

fact the more classes the better, for it may be more readily found in such case. To get the idea, go to some good library and carefully study their card-index, and their system of classification. You will find that every particular class of books has, first its general class number—it is in "the 100s," or "the 300s," or "the 900s," and so on. Then these "hundreds" are subdivided into sections Nos. 1, 2, 3, 4, 5, etc., then comes a closer subdivision, and so on until it comes down to individual books.

Do you realize that under the system in use in the best libraries, a person familiar with it can go to the shelves of any other good library using the same system, and pick out any book wanted, in a moment or two. Any book of the tens of thousands of books in these libraries, remember! Such a person would first go to the division of shelves numbered in the "hundreds;" then he would find the right subdivision, by its known and uniform number; and then the smaller subdivision, in the same way. Finally, he would pick out the desired book from the very small **possible** place in which it must be found.

Just as in a card-index there is only one place in which any particular name can **possibly** rightly be placed, so in a well classified mind there is a certain place (or places, in the case of ideas) in which a thing can be rightfully placed. Know the place, and you can always find the thing there.

As an example of efficient classification, I herewith present to your attention the well-known

zoological classification, which includes every known animal, and has a proper place in it for any newly discovered one. The botanical classification is equally complete; and so is that of minerals, etc. Here follows the zoological scale of classes:

I. The **Protozoa,** or class of very low one-celled forms of animal life, which includes the sub-classes of (1) the Monera, which is like a living minute drop of glue; (2) the Amoebae, which has a nucleus at its centre, and which manifests rudimentary extensions which serve as feet, etc.; (3) the Foraminifera, which are like the preceding form, except that they secrete a minute shell from the lime of the water; (4) the Polycystina, which secrete a skeleton-like structure from the water; (5) the Infusoria, which resemble the Amoebae, except that they have developed filaments which act as rudimentary permanent limbs, and have also developed a rudimentary mouth-opening and gullet—the prophecy of the organs in the higher classes of living things.

II. The **Coelenterata,** or "hollow-bodied" family, which comprises the sub-families of sponges, polyps, anemones, coral-builders, etc. The lowest sub-family of this group is that of the (1) Sponges, including the common varieties known to commerce, and also some very delicate and beautiful forms not seen by the public except in museums, etc. The common "sponge" of commerce, is merely the soft skeleton of a low type of sponge, the soft jelly-like body of which has been cleaned away from it. These lowly ani-

mals have whip-like filaments which drive the food into the numerous canals of its body, where it is caught and digested. Another sub-family of this group is that known as the (2) Hydra, or tiny cup or tube-shaped polyps, of which the well-known jelly-fish is a variety. The beautiful (3) Sea-Anemones, also constitute a sub-family of this group, as do also the (4) Coral-builders whose skeletons form the coral-reefs and coral islands, after the soft bodies have disappeared.

III. The **Echinodermata,** or "spiny-bodied" family, which comprises the sub-families of sea-urchins, star-fish, etc. This family includes very many species and varieties, all of whom bear the distinguishing feature of spines or prickles (like those of the hedgehog), or else jointed or leathery plates. We find a distinct nervous system among these animals, and even an eye with lenses.

IV. The **Vermes** or "Worm" family, which comprises the sub-families of worms, leeches, etc.—seven great groups of footless-jointed creatures. There is a very close relationship between this great family, and the one next to be described, in fact, the two families may be said to blend into each other.

V. The **Arthropoda,** or "jointed-footed" family, which comprises the sub-families of crabs, spiders, ants, all insects, etc. As I have just said, this family really blends into the preceding one —the crawling young insect, for instance, bearing a very close resemblance to the worm family. The Insect sub-family, of course, has very many

thousand species, and many sub-families and smaller divisions. Its members are jointed like the worms, but have limbs which are lacking in the former, and which have been developed from the muscle-fibres, in pairs. Among its sub-families are the wormlike (1) **Peripatus** creatures; the (2) **Crustacea,** including the many varieties of lobsters, crabs, shrimps, etc.; the (3) **Myriopoda,** or centipedes, millipedes, etc.; the great (4) **Insecta** sub-family, which includes all true insects; and also the sub-family of the (5) **Arachnida,** which includes all spiders, mites, scorpions, etc. The mark of the true Insects, is that thread-like connection between the otherwise separated three parts of the creatures. The name **"insecta,"** means "cut into," and bears a close resemblance to the English words "in sections," you will notice—this, by-the-way will help you to remember the meaning of this term. The Insect sub-family, of course, has very many sub-divisions, sub-groups, species, etc.

VI. The **Mollusca,** or "soft-bodied, usually protected by a shell" family which comprises the sub-families of sea-squirts, oysters, clams, snails, slugs, small cuttle fish, etc. This is a large family, containing members of high and low degree. It ranges not only from low organism to that much higher, from the ugly oyster to the beautiful pearly nautilus, but also from the 500 lb. **tridacna** of the tropical seas, to the minute creatures of the temperate zone, which require many thousands to weigh an ounce. Some of its species are fixed in position, like a plant; while

others roam and range the seas, or travel on the land. The cuttle-fish and the common snail are very different in many respects, but both have the general family characteristics.

VII. The **Vertebrates,** or "back-boned" family, is one of countless variety, comprising the sub-families of the Fish, and all the Higher Animals, including Man. Its distinguishing mark, of course, is the possession of a back-bone of some kind or degree. This is the highest family in the animal world. It covers a wide range, including fish, frogs, birds, reptiles, the warm-blooded creatures, up to man. Its lowest sub-family is that of the (1) **lancelots,** which has a gristly back-bone, but no true bones in its body; then come the great sub-family of the (2) **Fishes,** high and low; then the great (3) **Amphibian** sub-family, including the frogs, toads, etc.; then the great (4) **Reptile** sub-family, including the turtles, lizards, serpents, crocodiles, etc.; the great (5) **Bird** sub-family with its thousands of species; the highest sub-family of all, the (6) **Mammals,** or "milk-givers," some of the lowest forms of which resemble birds in some respects, and its highest form being known as "men."

The lowest mammal group is that known as the (a) **Monotremes,** which includes the duck-bill creatures, which seem like a freak of nature, having the bill and feet of a duck, and the body and tail of a beaver; and the spiny ant-eaters—both of which lay eggs like the reptiles and birds, though nourishing their young at the breast. Next in order comes the (b) **Marsupial,** or

"pouched milk-giver" group, including the opossums, kangaroos, etc., the distinguishing mark of which is the mother's pouch in which the imperfect young are kept until they can run alone. Then come the highest group called the (c) **Placentals,** whose young are born fully formed, having been nourished in the mother's womb by means of the **placenta.** This group comprises the Higher Animals, and is carefully sub-divided into many classes, and sub-classes, according to certain leading structural characteristics common to the various species included in each class.

CLASSES OF PLACENTALS. The following is the classification of the Placentals, adopted by many of the best authorities:

1. **Edentata,** or "Toothless," including the sloths, ant-eaters, and armadillos. (While called "toothless" some of its species have rudimentary teeth—but not true teeth.)

2. **Sirenia,** or "Sirens" (so-called from their fanciful resemblance to the mermaids or sirens of mythology), including dugongs and manatees, or sea-cows, etc.

3. **Cetacea,** "Whale-like," including whales, dolphins, porpoises.

4. **Ungulata,** or "Hoofed," including the "odd-toed, as the horse, the tapir, and the rhinoceros; and the "even-toed," as the swine, the hippopotamus, camel, deer, sheep, cow.

5. **Hyracoidea,** or "Rock-Rabbit," including the coney family, which has hoofs, yet gnaws, like the grawing animals—this is another strange animal, seemingly between two families.

6. **Proboscidea,** or "Trunked," including the various species of elephants.

7. **Carnivora,** or "Flesheaters," including seals, bears, weasels, wolves, all the great dog family, foxes, jackals, etc.; lions, tigers, leopards, and all the other members of the great cat family.

8. **Rodentia,** or "Gnawers," including hares, rats, mice, beavers, squirrels, etc., and constituting a very large family.

9. **Insectovora,** or "Insect-Feeders," including the mole, hedgehog, shrew.

10. **Cheiroptera,** or "Finger-winged," including the various species of bats.

11. **Lemuroidea,** or "Lemurs," including the peculiar class of monkey-like creatures who also have marked affinities with the marsupials, gnawers and insect-feeders. They form a subgroup "all by themselves."

12. **Primates,** or "Chief Class," including the monkeys, baboons, man-like apes (gibbon, orang-outang, chimpanzee, gorilla), all distinguished by big-jaws, small-brains, and stooping posture; also Man, in high and low degree, distinguished by big-brains, and erect posture. Man, again, is divided in many races, according to shape of skull, color of skin, nature of hair, etc.

The above zoological classification should be carefully studied and considered by the pupil, not alone for the value of the information therein contained, but also as a training for the mind in careful comparison and classification. A little thought will show you that it was the work of

the most careful minds to set apart the class of vertebrates, for instance, which finds the common and general characteristic of a "backbone" distinguishing such a wide variety of animals as the frogs, reptiles, fishes, birds, and mammals, and thus groups them into a great family. The distinction of backbone, or no-backbone, at once divides the animal kingdom into two great subdivisions. In the same way the division of the vertebrates into mammals, and non-mammals, makes another striking division into two classes. And, finally, the division of the Placentals into the twelve groups above mentioned, required the presence of the keenest intellect.

Notice the method of the zoologist in making this classification. He first makes the broad, wide classifications, and then divides these into smaller, and these into still smaller, and so on—each classification being based on striking points of resemblance and difference. The result is that the zoologist discovering an animal unknown to him, can place it in the scale in a few moments, working from the large divisions down to the smallest.

The technical divisions of the zoologist are named as follows: (1) the sub-kingdom; (2) the class; (3) the order; (4) the family; (5) the genus; (6) the species; (7)the variety; (8) the individual. In stating the classification, in this chapter, I have used the term, "family," "class," etc., in a loose sense. Look at your dictionary, and when you see that a "bird" is defined as "a warm-blooded, feathered, winged vertebrate,"

you will now know just what that definition means—each and every bird must possess those characteristics to be a bird. The bird family has, of course, many families, species and varieties, all of which have their own particular distinguishing characteristics—but every bird must have the general "bird" characteristics.

Every thing, of any kind or degree, has its own particular place in the great card-index of the mind. True education results in the placing of everything in its right place, when that place is found. Human reason is ever seeking to find the right place into which a particular thing may fit, and it does this largely by perception, comparison, association, classification—all of which we have seen to play an important part in memory. Do you not see, more and more as you progress, the close relation between memory training and mind training?

Would you like to know how Men are classified—following the same system? Here it is then—it may contain some surprises for you—it is well worth your study, for its own sake, and for the sake of exercise in classification.

CLASSES OF MEN. Men are classed primarily as follows:

I. Wooly-Haired (nearly all long-headed), which are divided as follows (a) tuft-haired, which comprise Papuans and Hottentots as its two varieties; and (b) Fleece-Haired, which comprise the two varieties of Kaffirs and Negroes.

II. Straight-Haired (nearly all broad-headed,

with the exception of the Esquimaux and native Australians who are long-headed) which are divided into two classes as follows: (a) Stiff-Haired, including the Australians, Malays, Mongols, Arctics, American Indians, with the numerous varieties of each class; and (b) Curly-Haired, which include the Dravidas, Nubians, and Mediterranean groups. Passing by the Dravidas and Nubians, which have but few sub-divisions, let us follow the analysis of the Mediterranean Group of the Curly-Haired branch of the Straight-Haired (broad-headed) family of men —this is the one to which the writer and, in all probability, the student, belongs.

THE MEDITERRANEAN GROUP. This great, and ruling, group of mankind is divided as follows: (1) Basques; and (2) Caucasian. The Basques have practically no sub-divisions, being a small race. The Caucasian group comprises (a) the Semitic races, including the Hebrews, Arabs, and probably the Egyptians; (b) the Indo-Romanic group, including the Hindus (high-caste), Persians, Greeks, and Romans; (c) the Slavo-Germanic group, including the Slavs, Scandanavians, Teutons, and Celts. From the last classification, we may easily proceed to divide into nations, provinces, and smaller classes.

Proceeding further, we reach individual families, and the members thereof—every single person has his place in the scale. The principle is the same as in the animal kingdom, the vegetable, the mineral, or in the general world of ideas—always proceeding from the great classi-

fication to the lesser, and so on until the individual is finally reached and "ticketed" or indexed. You will note that the principle of the cataloguing of a modern library (as previously noted) is applied to the animal kingdom, and to the race of mankind, all with equal precision and regularity, and with equally satisfactory result when completed.

(NOTE: The above tables of classification will serve as excellent material for the use of the student in committing to memory a classified subject. In this work, I advise the application of the system of Cumulative Memorizing, which I describe and teach in a succeeding lesson. Not only is the subject matter well worth committing to memory, but, as an exercise, this material is excellent, by reason of being broken up into small divisions, and also by reason of its classification being in accordance with strict logic and scientific arrangement. The student, by using it as above indicated, will not only strengthen and exercise his memory, but will also, unconsciously and gradually acquire the mental habit of thinking of, and remembering, things in classified order and arrangement. Practice of this kind is akin to the laying of mental rails over which the train of thought and memory may run easily.)

## LESSON XXV.

## EFFICIENT RECOLLECTION.

We have considered the first two great principles of memory, viz.: (1) Perception; and (2) Association; and now pass on to a consideration of the third great principle, namely the Principle of Recollection.

Recollection actually and literally means "re-collection"—the "re-calling to the field of consciousness of something that had at sometime previously existed in that field. The thing had been perceived, and its impression recorded on the subconscious substance of the memory, and there stored away. To re-collect or re-call it, voluntarily, there must first exist a desire, followed by an actual effort or command of the will.

The memory has several phases of operation, as follows: (1) Receiving impressions perceived by the mind; (2) retaining and arranging such impressions (these two have been considered by us); also (3) reproduction, or recalling into consciousness the impression which has been retained in the subconscious memory; and also (though generally overlooked by the student), the following two additional phases, namely, (4) recognition, or the realization that we have known the same mental image before in connection with its object; and, finally, (5) identification, or the knowing of the impression in its relations of time, place, and association.

Recognition really is a very important opera-

tion of the memory, as is indicated by its name, which, analyzed, is found to be "re-cognition," which means "re-knowing." Recognition really means a re-knowing of the thing causing the impression. It will do us very little good, indeed, to be able merely to reproduce the image in consciousness, if we do not, at the same time, re-know or recognize it for what it is, or represents. A tired mind will sometimes recall an impression, but will fail to recognize it as having proceeded from its particular object. We may recollect the face of a man on the occasion of a second meeting, but not recognize him as himself—not re-know him as John Smith. Or, again we might be able to visualize the appearance of the man, from the records of memory, but not be able to recognize or "place" this as belonging to the person we knew as John Smith. We frequently recognize a man partially—that is we remember his face as having been known at one time, but we fail to associate the recollection with other circumstances concerning the man. Full recognition consists in fully identifying him with place, time, and the general features of the original knowing.

Identification carries the principle of recognition a little further, and may be considered as a higher phase of the same. We may recognize an idea as having a clear relation to other remembered things—may be able to fit it into its proper class of ideas—but we may not be able to identify it with the time, place, and circumstances attendant upon its original perception.

We may recall an idea, and recognize its relation to other ideas, but at the same time may not be able to recall the book, or place, from and in which we first perceived the idea or thought. Full identification covers all the other factors and may be considered as a **full recollection.**

I have pointed out that remembrance may be considered as involuntary recollection, awakened by some subconscious process, or perhaps by some association with something just perceived. In such cases we did not **try** to recall the idea—did not even desire to do so. Many remembrances may come to us unasked, and alas! too often, undesired and undesirable. Recollection, on the other hand, is purely voluntary, and comes as a link in a chain of memory processes set into operation by an act of the will. Sometimes the idea is recalled immediately, or shortly after we have called for it, by an act or demand of will. At other times, it does not appear for some time afterward, and perhaps after we have given up all hope of recalling it. Every one knows how these half-forgotten ideas will flash into the consciousness, after having been "given up."

Psychologists who are familiar with the operation of the subconscious planes of the mind, know that the latter often will bring to light impressions of this kind, in response to a firm, confident command to it to perform this work. Strange as it may appear, the mental command: "Here! memory, find this thing for me—and bring to me as quickly as possible!" will act in the direction of setting into operation the sub-

conscious machinery of reproduction of impressions. In many cases, in a few minutes the thing will flash into consciousness. In such cases, it is well to turn the mind to something else, giving up the conscious search, and trusting entirely to the subconscious to do the work for you. Of course, the words of the command have no magic in them, and are merely used for the purpose of giving the voluntary command properly. Try this experiment on yourself, and see how soon it will begin to work out successfully.

While the succeeding lessons of this course will have much to say regarding the application of the principle of recollection to various forms of memory reproduction—in which the principal points will be brought out in various ways—there are, nevertheless, a few general rules and details which should be touched upon at this point. I now call your attention to the same.

In the first place, there is much in the mental attitude you assume toward your memory. If you doubt and distrust it, your subconsciousness will be apt to take up this idea and make it come true in practice. If, on the contrary, you assume an attitude of trust and confidence in your powers of recollection, your subconsciousness will take up the idea as true, and tend to make it come true. This is not "faith cure," or anything of that kind, but is based on true psychological principles. There is more in the great psychological Law of Suggestion, in these matters, than the average man has any idea of. Do not lose time trying to explain this thing—some other time

will be as well—but put the principle into practice, and notice how well it works out for you.

Again, in trying to recall an idea, or impression, if you cannot get it at once, and easily, try to find the "loose end" of association, and recall it in this way. Try to remember something that you heard or saw at the same time or place, and you will often find your "loose end" without more trouble. Or, else think of something else that resembles it in some way, or else is very different from it. Try to find it by any of the different phases of association of which you have been told in these lessons. The thing surely has a number of associations in your mind—try the most likely ones. Try to recall it by eye-memory, and ear-memory, in turn. If you have mastered the principle of association, you will generally manage to get hold of some associative "loose end." In this connection, it may be well for you to try to recall the memory of the last time you recalled the thing in memory—this often will bring the thing into consciousness, for you will have set up some form of associated time impression which will help you out.

And, in this last connection, whenever you recall a thing in this way, remember what particular "loose end" helped you out. The same thing will probably act the same way the next time, and by remembering the helper you have created a strong associated element for future use. And, again, also try to send a recalled impression back to the memory, when you are through with it, with a strong, fresh perception,

and with as many good strong logical associations as possible, for this will help you to recall it later on. Remember, also, the principle that impressions deepen and grow stronger by each recollection—each re-perception gives strength and depth to the original impression. Finally, in recalling an old impression, endeavor to recognize and identify it as fully as possible, for by so doing you give it stronger associate value, both as concerns itself and also the things so associated with it.

Another useful point in this connection, is this: if you cannot recall a thing, do the next best thing and try to recall some component part, phase, or aspect of it—this often brings to consciousness the missing parts, by the operation of the law of association. For instance, if you are trying to remember a scene in London, and cannot bring it clearly into mind, try the experiment of recalling to mental vision of some other London scene as close to the wanted one as possible. In a moment or two, the association is apt to bring you the desired recollection.

If you cannot remember the features or name of one member of a family, try to recall the appearance or name of some relation or friend of his, and you will often set up the chain of association in this way. Again, if you forget a name, try the experiment of running over the letters of the alphabet, slowly, and when you reach the right letter, the rest of the name will be apt to "pop out" in consciousness. If the name originally was merely heard, repeat the letters aloud;

whereas if you originally have seen it in print, or writing, run over the alphabet in this way—the one arouses ear-memory, and the other eye-memory. If you have forgotten a locality or direction, try to travel over the original route in your memory, and you will soon get the missing place or direction.

Along the same lines, you will find it an aid to recollection, if you will place yourself, in imagination and memory, back in the same place and time in which you received the original impression. This will often set up associative memories which will give you what you want. Again, when you cannot recollect a thing, search for it in the class of memory associations in which it **should have** been placed. In such cases, you will find that, even though you have failed to give the thing its proper associates, nevertheless, it will have picked up certain of such associations, unconsciously and automatically.

The subconscious mind has a little trick of this kind, and often forms a set of associations for a thing even though we do not consciously seek to create them. In such cases, the association is made automatically, with some thing subconsciously remembered, although not consciously recollected. There is a twilight region of the consciousness in which work of this kind is often performed. So it is a pretty safe rule to look for associative links where they **should be** found, even though you have not consciously placed them there.

A good nut-shell rule covering the above vari-

ous suggestions regarding the "helping out" of your power of recollection, is this: Reverse the process of Association—think of as many things bearing some **possible** relation to the thing you wish to recall, and try to get hold of the "loose end" in this way. In association you seek to "entangle" a thing in as many associations as possible; while in the case of a forgotten thing, you should seek to disentangle it from some of a number of **possible** or probable associations. Like a misplaced book on the shelves of a library, you may often find the missing thing "somewhere around" the place where it ought to be.

If you can only resurrect some train of thought, or chain of associated ideas, in which the missing thing has ever appeared—the thing is as good as found, for all you will have to do is to pull on the "loose end" so furnished, and the thing will sooner or later appear.

At the last, then, "forgetting" is seen to be not the actual disappearance of the thing itself—for it is there in the subconsciousness, all safe and sound—but rather a loss of the "loose end" of the chain of which it forms a part. Every thing in the memory forms a part of many chains of association—the more associations you have given it, consciously or unconsciously, the more chains is it connected with. Or, putting it another way, the greater number of cross-indexes of association you have given it, the greater number of possible index cards on which you will find it printed, and the greater your chances of finding it.

## EFFICIENT RECOLLECTION

I have told you all of these things about association, under that classification of the subject. But I am telling you them again, so that you may apply the REVERSE process, in case of a thing apparently lost to recollection. Just as you may associate a thing in order that it may be easily remembered and recalled, so you may hunt for things with which it **may be,** or **should be** associated, in hopes of finding one with which the connection and association really has been made, consciously or unconsciously. Do you get the idea? Look for it in the places of **possible or probable** association, rather than conducting a blind haphazard hunt, or else giving it up in despair. Every thing has its right place, and this lost (?) thing may be in the right place, even though have not consciously put it there. The "little brownies of the mind," as Stevenson called them, may have done some good work for you, while you slept.

## LESSON XXVI.

## EFFICIENT MEMORIZING.

By the term "memorizing" is meant "committing to memory," or, as the familiar expression puts it: "learning by heart." This term, in its broad sense, carries with it the idea, not only of impression upon the memory, but also that of easy reproduction or recollection by an act of will. When we say that we have memorized a thing, we mean that we have strongly impressed it upon the subconscious records of memory, and are able to recall and reproduce it at will. As a rule, the term "memorize" is applied to lists of names, verses of poetry, paragraphs (or larger divisions) of prose, etc. It is seldom that one speaks of memorizing a single isolated thing.

While all the principles and rules of memory training may be, and must be employed in the task of memorizing, there are certain special rules which are particularly applicable to this form of memory training—the task of memorizing—and which really constitute "the best way." This "best way" is the result of the experience of the race, and is based not only upon sound psychological principles, but has also borne the test of centuries of use by the greatest minds of the race. Psychologists know it as "The Cumulative Method." The history of memory training shows us that this method was the one employed by the ancient peoples in their marvelous feats of memorizing their sacred books, epic poems, etc.,

of which I have given you celebrated examples in the earlier lessons of this course.

THE CUMULATIVE METHOD OF MEMORIZING. The term "cumulative," applied to this system by the psychologists, means "consisting of one thing added to another, and gaining by the successive additions." The definition gives a very clear idea of the working and principles of this method, for the latter consists of gradual additions, the whole gaining power and strength by repeated additions and reviews. This is the natural way of memorizing, and is the one followed by the child in learning his alphabet, multiplication-tables, rules of mathematics, axioms of logic, etc. It is Nature's own way; and is in no sense artificial, strained, or forced. Instead of weakening the power of memorizing as do some of the artificial, unnatural systems, it tends to develop the "muscles of the mind" by use and exercise along scientific lines. Properly applied it will create a giant power of memorizing, in place of the puny one with which one may start practicing the method. The term "learning it by heart," is well applied to this method.

The leading principles of The Cumulative System are as follows:

I. Small beginning.

II. Repeated small additions.

III. Review of the old, at the time of each addition.

IV. Gradual increase in size of additions.

The student of these lessons will perceive that there are three great principles of memory in-

volved and manifested in this system, viz.: (1) The association of the new with the old; (2) the strengthening and deepening of the old impression by frequent repetition; and (3) the proficiency which always comes from cumulative exercise—the gradual gain in proficiency by repeated small additions.

It is always easier to remember a new thing by associating with an old impression. Likewise an old impression is deepened and strengthened by each review, and repetition—by each revival in consciousness, upon the occasion of the repeated cumulative additions. And, again, human experience has proven that the mental faculties, like the bodily muscles, may be best developed by graduated exercise, proceeding from the small task to the greater, and so on, the frequent repetition developing the power to take care of each addition when made. A young racehorse is trained on a small distance run; then on a greater distance; and finally he reaches the long-distance stage. All true education, and training, proceeds along these lines—little by little, and an increase of the load at each stage of the cumulative exercise, with the ever present REVIEW or PRACTICE of what has already been acquired. This is the whole secret in a few words: Gain by repeated additions and frequent review.

HOW TO BEGIN. The student who wishes to acquire this method of memorizing should begin by selecting some poem, or prose writing, which appeals to his taste and liking. If you are fond of poetry, select some celebrated poem, pref-

erably one composed of short verses. A four-line verse is better than any to start with. If poetry does not appeal, select some address by a celebrated man; or a chapter of the Bible. Poetry is easier to memorize for many, because of its suggestive rhythm. The Psalms of David furnish excellent material. The plays of Shakespeare are very good. Famous orations, ancient and modern, will be found interesting and full of life, which is a desirable quality.

Having selected your material—a poem for instance—proceed as follows: Commit the first line to memory—or, better still, the first two lines if they are connected in sense. Repeat them over several times, referring to the text as little as possible, until you are "letter perfect" in them, and able to repeat them correctly from start to finish. Then add two more lines, in the same way, until you have the last two as perfectly memorized as the first two. Then review the four as a whole and connected task. Review the entire four, as a whole, several times, until you are "letter perfect" in it in this way.

You will soon lose the sense of division between the two parts, and the four lines will blend and harmonize as a whole, so that when you begin the first word you will be able to proceed easily and naturally to the last. If you perform the task properly, the recitation of the memorized four lines will be as easy as reciting the alphabet, A, B, C, D, E, F, G, etc. Always recite aloud so as to gain the association in ear-memory as well as in eye-memory. Some go so far as to

write down the words, in reviewing, but this is not absolutely necessary, and, then, you may get tired of the work of writing so much. After you have memorized the four lines, as above instructed, leave the task for the day, and put it out of your mind.

THE SECOND STEP. The second day of your task, review, by recitation, the four lines you committed to memory the preceding day. If you are able to do so correctly, you may proceed with the next step. **But, under no consideration should you take the second step, until the first one is firmly placed.** That is, if you find that you cannot perfectly recite the first four lines, take up that part of the task again, and stick to it until you have mastered it, and can recite it as easily as your "a, b, c," of the alphabet. Then, and then only, should you take the second step. Beware of weak rounds on your ladder of memorizing, for unless you make each round strong enough to bear you, you may find much trouble in the higher rounds. No chain is stronger than its weakest link, and your chain of memorizing will be weak if a single link is neglected. I cannot impress this upon you too forcibly.

Finding yourself perfect in the recitation of the four lines, proceed to memorize a second four lines in the same way. Stick to the task until you have mastered it equally with the first. Then, begin with the first word of the first four lines, and proceed with the recitation until the last word of the second lesson is reached. That is, attach the second four lines to the first four,

making a whole, and then recite the eight in sequence. Do this several times, until you feel that the eight lines are impressed upon your memory in regular sequence, and as connected parts of a whole. Remember this rule: Begin and end each day's memory-task with a review of the whole thing so far as you have proceeded. Begin the task by reviewing the old task—conclude by reviewing the old plus the new, the new added to the old. Do you get the idea?

THE THIRD STEP. The third day, follow the same general instructions. Begin by reciting, in review, the eight lines you have already memorized, keeping at this stage until you can do this thing perfectly. Then add a new four lines, just as you did the second four the day before. Then review the old with the new added, until you have firmly established the cumulative impression in your memory.

SUCCEEDING STEPS. The fifth, the sixth, the seventh day, and all that follow, are but repetitions of the second and third, except that each day a new four lines are added. Each day's work begins with a review of the old; then the new is memorized; and then you conclude by reciting the whole thing—the old plus the new. Keep this up until you have mastered the entire poem. As formidable as a poem of a hundred lines may have appeared to you at the start, you finally will be able to recite it with the greatest ease by this method. And, once memorized in this way, it will be clearly retained in the memory, if kept alive and fresh by an occasional review at in-

creasingly long intervals of time.

HIGHER STEPS. You will soon find that the four lines seem like a "baby task" to you, and you will realize that you could as well memorize **eight lines each day.** Well, when you really reach the eight-line stage, you may take up the task in that sized bits, if you wish to do so. You will soon increase your capacity, of course, for that is the way the method works out. But do not be over-anxious, and do not strain yourself by assuming the heavier tasks before your memory shoulders are strong enough to bear them. Beware of hot-house methods—it is better to grow as does the flower in the open air, according to Nature's own plan.

INCREASING THE TASK. The general rule in this system is to begin with a certain unit of lines, four lines, or eight for instance, depending upon the capacity of the individual—straining being avoided. This should be the daily task for the first month. The second month, the unit may be doubled; the third month trebled; and so on. This increasing load may be carried up to a certain point, when strain will be manifest. When you feel the strain too heavy a daily load, stop at once and cease adding to the unit, until you feel that you have developed sufficiently to do so. Do not exceed your natural, easy limit. Let your own feelings be the guide.

Keep up your exercise every day. If you feel too tired, from other work, to add the daily unit, simply review what you have already learned—two different sets of faculties are employed, and

though one may be tired, the other may remain fresh, as you will discover. I would rather have you discontinue the addition of the new units, than to have you stop reviewing. **Review, review, review**—that is the keynote of this system, or any other good one, for that matter. You will soon have accumulated a great store of memorized material, which should be reviewed every once in awhile, in order to keep it alive. As I have said, you may increase the time between these occasional reviews, as you proceed—there is a natural ratio in the matter. I know persons who can correctly recite long poems, orations, etc., in this way, which they memorized over forty, or possibly over fifty, years before, and which they review, say, once a year or so. I know men who are able to recite whole plays from Shakespeare, or the French dramatists, in this way—though they have not referred to the text for twenty years or more. Whole chapters, and books of the Bible are frequently memorized in this way, and, when once well memorized by the Cumulative Method, they need be reviewed only at long intervals.

Men in professions, business life, and trades, may memorize lists, tables, a classified synopsis, etc., etc., in place of the verses, etc., for the principle is precisely the same in all cases. In short, this method may be employed in any and all cases in which the thing to be memorized consists of a series or sequence of WORDS.

The work of memorizing by means of this system often proves very fascinating to the student.

The sense of development and growth of power is very invigorating and stimulating. The student feels that he is "getting somewhere" in his task, and that his work is "counting." Moreover, he finds that he is able to quickly memorize, remember, and recall the little things in his everyday life, which formerly gave him trouble. The mind, feeling its increased power, experiences a sense of freshness, vigor and capacity, which causes it to act efficiently, and prevents it from tiring or becoming weary as in the case of undertaking unaccustomed tasks.

While the Cumulative Method is adapted especially to the particular class of memorizing mentioned by me in this lesson, nevertheless its leading principles of Cumulative Progress, and Review, may be applied to advantage in almost any other class of memory training or memorizing. It will pay the student to learn to apply these principles in various ways, to the different tasks of memory which come up from time to time in all lines of work.

## LESSON XXVII.

## HOW TO REMEMBER NAMES.

The failure to recollect surnames, or, perhaps, to identify particular persons with their rightful surnames, is one of the most frequent complaints on the part of persons who interpret the same as an indication that they "have a poor memory," or that their "memory is failing," etc. This, notwithstanding the fact that many of these same persons have no trouble in remembering and recollecting other things, or in memorizing long lists, verses, etc. How often do we witness the confusing: "Would you mind telling me your name—I've such a poor memory for names!" or the equally humiliating: "I remember your face very well indeed, but I can't recall your name!" How many persons complain: "I have an excellent memory for faces, but such a wretched memory for names!"

The trouble with the majority of these name-forgettors is (1) that they have not cultivated a sufficient interest in, or knowledge of names, and, consequently, do not make sufficiently strong name impressions on their memory records; or (2) they have not cultivated the art of making the proper association, connection or "link" between the impression of the person, and his name; or, possibly (3) they suffer from a combination of both of these "lacks." But these deficiencies may be remedied, as I well know from my twenty years' experience in teaching pupils

the science and art of memory. I have known persons originally very "weak on names" to cultivate themselves to such an extent that they became noted for their wonderful and extraordinary memory and recollection of names.

INTEREST IN NAMES. To the average person a name is simply an arbitrary and meaningless label or "tag" placed on a person for the purpose of identification. Such a one is not in the least interested in the subject of names, and cannot even imagine that any other persons can find the subject one for interest. But even such persons will realize that, occasionally, some peculiar name will attract their attention, either by reason of its oddity, or because of some semi-humorous resemblance to some other thing. And, a little thought would cause these persons to realize that, as a rule, they have very little trouble in remembering and recalling this class of names. Though they may not realize it, the reason for this preference in memory is merely that they were interested in the odd or peculiar name, and therefore impressed it more strongly on the memory.

One may not remember Smith, Jones, or Brown, but he remembers Younghusband, Crookshank, or Bloodgood, very well indeed, while Darling or Sunshine involuntarily recall themselves at unexpected moments. Such persons may also notice that they find it much easier to remember "nicknames," than the ordinary surnames. "Fatty Brown" is remembered, where his brother James J. Brown is forgotten; and

"Red" Flynn is easily recalled, while P. J. Flynn has slipped away from memory. A little thought will show you that this is largely because of interest, or lack of it. The moral is: Take an interest in persons' names, and you will begin to like them, and consequently to remember them easily.

At the first thought, the subject of surnames does not seem to be one calculated to arouse or hold much human interest. But if you will pick up some good book on the subject of surnames, you will soon begin to get interested in spite of yourself, for the study of the origin, derivation, changes, variations, of surnames is a fascinating one to many minds. Consult the library of any large city, and under the head of "Names" or "Surnames," you will find a number of interesting books on the subject.

On the subject of English surnames, perhaps the most exhaustive book is "Bardsley's Dictionary of English Surnames," which gives a list of nearly every English surname, with its origin, and its variations. But, the most interesting work I have ever read on the subject, is entitled "The Romance of Names," by Ernest Weekley, M. A. (John Murray, London, Eng., 1914). I defy you to read this last mentioned book, and fail to take a new interest in the study and subject of surnames.

If you do not care to go to the trouble of reading a book of this kind on the subject of names (though such a study will repay you well if you are "weak on names"), you should at least try to

take enough interest to look for the meaning of names, their resemblances, points of difference, etc. By doing so you will gradually build up an interest in surnames, and will, at the same time, notice that your memory for names is improving.

Surnames may be grouped into classes, with regard to their origin, in the majority of cases, although some of them have become so distorted, altered, and abbreviated, that it is almost impossible to locate and place them, without reference to books such as I have mentioned. Many names are but baptismal personal names afterward applied to families, such as Johns, Walters, Thoms, Jacks, George, August, etc. To this class belong many names ending in "son," indicating the son of the original bearer of the baptismal name; for instance, Thomson, Johnson, Wilson, Robinson, Jackson, Peterson, Oleson, Larson, and a long list of others. Also, those ending in "kin" which means "little," as for instance: Tompkins, Atkins, Pushkin, etc. There are a number of similar prefixes and suffixes, of equal importance, as you may see by reference to the books on the subject on the shelves of your city library.

Then come the large class of names indicating the trade or occupation of the founder of the family, as for instance: Baker, Brewer, Carpenter, Goldsmith, Cooper, Smith, Currier, Miller, Cook, Mason, Sawyer, Weaver, Hunter, Fisher, Fowler, Miner, Turner, Porter, Carver, Taylor, Barber, Tanner, Draper, Shepherd, Sadler, Carter, Gardner, etc. Then come the group indicating the personal qualities or characteristics of

some old ancestor, such as Strong, Hardy, Noble, Bright, Gay, Merryman, Savage, Swift, Long, Short, Sharp, Sweet, Sauer, Sly, Spry, Weakling, etc. And, again, the group whose ancestors were given the names of animals, such as Fox, Hare, Wolf, Lyon, Hart, Buck, Bird, Finch, Parrot, Partridge, Drake, Gosling, Suckling, Hogg, Heron, Crane, etc. And, the near group, named after plants, as Wood, Root, Branch, Weed, Stump, Bush, Flower, Rose, Birch, Pine, Ash, Hazel, Oak, etc. Also, those whose forefathers were given the names of features of the landscape, as for instance, Hill, Dale, Field, Marsh, Lane, Rivers, Brooks, Forest, Vale, Mount, Mountain, Valley, Villa, Swamp, Bog. Also, those named after colors, Black, Brown, Blue, White, Scarlet, etc. Also those associated with size, as Long, Short, Little, Small. Also the Whiteheads, Blackheads, Redheads, Bigheads, Crookshanks, Bigfoots, Longarm—not quite so common, but yet found almost everywhere. Also those named after the place of birth of some ancestor, for instance, Boston, London, Berlin, Paris, Dublin, Madrid, Salsburg, Marburg, etc. We also find lists such as Pole, Stump, Post, Wood, etc.

The above lists might be multiplied indefinitely, but the above will serve to illustrate the principle. The names of persons, associated with the ideas of the thing which their name resembles, will be recalled much easier than names which have no such association, and which "mean nothing" but a group of letters. The nearer a

name is capable of being pictured in the mind in the shape of an associated object of vision, the greater the ease in recalling it. A study of names, beginning with the class of books mentioned by me a little further back in this lesson, and passing on to a study of directories, etc., will soon awaken an interest in names, and will lead to the perception of their association with other things, other names, and subjects. This will furnish a real associative value to the name, and will lead to its easier recollection.

If you wish to create this interest in names, for the purposes mentioned, you should begin by "thinking" of a new name when you first hear it —trying to determine from what source the name arose (for all names had an origin and source, and did not spring into being spontaneously—the majority were applied practically as nicknames), and then associate it with its source, and classify it with other names known to you. The name "Gould" will be seen to have been derived from "Gold," in all probability; and "Watkinson" will be recognized as meaning "the son of little Walter," i. e., "Wat-(Walter) kin-(little) son." Before long, you will begin to take quite an interest in the classification of names, and will feel pleased when you discover a new, strange name, or else succeed in classifying a puzzling one. When that day comes, it will also find you becoming quite proficient in name-memorizing and name-recollection. Remember the old axiom: Memory is the child of attention, and the grandchild of interest.

Some have found an aid in a kind of artificial or fanciful resemblance or association between names and things. For instance, the name "Anthony" has been thought of as linked with "Ant;" and "Cowper" with "Cow;" "Kingsley" with "King," and so on. Again, some peculiarity in the appearance of the person, has served to link his name to him, as for instance, a man named "Redding" had his name associated with his red hair; and one named "Beek" was remembered by reason of his large, hooked nose which was thought to resemble a bird's "beak." These methods are fanciful and often forced, but they have a certain value in particular cases.

It is generally easier to recall names with which we are quite familiar, than those of the opposite kind. In such cases there seems to be a kind of association set up between the already-known persons bearing the name, and the new person. This rule holds good even if we merely know the first persons by reputation, as for instance Washington, Grant, Dewey, Kitchener, Bismark, Gladstone, Joffre, Poincaire, etc. Another form of name-association is that of a similarity in sound between the name and some well-known object, as for instance, Bunyan (bunion); Cushing (cushion); Medici (medicine); Prettiman (pretty-man); Summer (summer); Hocking ("hocking," slang for pawning); Stretch (stretch—"to extend"), etc.

In memorizing a new name, it will be well to establish as many associations as possible for it —using the above suggestions, which will be

found to be very useful in this connection, for the list includes practically all the approved methods. Try to hang it on as many hooks of association as possible. **The very mental effort to find such hooks for it, tend to impress it more strongly upon the memory,** it is well to remember. Also try to associate it with the time and place at which it was heard, and so far as possible with the person's appearance; also with the circumstances connected with the mention of the name. Bring up these associations, afterward, in connection with the name, for by so doing you make much easier the future recollection of the name—because you have strengthened the chain of association by so doing.

Another good plan is that attributed by historians to Napoleon III, who was renowned for his excellent memory of names and persons. He had developed this memory by writing down on paper the name of the person whom he had just previously met, reading it aloud several times, and then destroying the paper. Re-writing a name **several times,** will serve to deepen the impression, as will also the speaking aloud of the name, several times, so that your ear-memory is impressed by the sound. A combination of the above mentioned two methods will be found to be an improvement upon either practiced separately.

A very excellent method of acquiring an easy **recognition** of persons, and an identification of them with their names, and **vice versa,** is that of taking a clear, searching look at the person when you first meet him, noting his features (see in-

struction of memorizing faces), and at the same time repeating his name. Always make a point of repeating a person's name, when you have had it mentioned to you—it pleases the person, and aids your memory. In thinking of the person afterward, always try to picture him in your mind, at the same time murmuring his name. Or, if you hear his name, try to picture the person. It is well to revive the impressions of persons and their names, in a sort of mental review, for by so doing you strengthen the original impression and association.

But first, last, and all the time—manage to work up an interest in NAMES of persons, along the lines I have pointed out to you. If you want to be an expert on horses, you must study horses with interest—if you wish to be a proficient botanist, you must take an interest in plants. The interesting things are easily remembered. Therefore, take an interest in names, as names—study them—and you will become known as "the man who never forgets a name once heard." This is an actual fact, and not mere fancy. You **can** do this thing, and **will** do it, providing you are willing to pay the price of working up an interest in the study of names, so that they will grow to "mean something real" to you when you hear them. Why, there are men who can take pleasure in studying the pages of a directory! Can you not see why? Can you imagine such men forgetting a name?

## LESSON XXVIII.

## HOW TO REMEMBER FACES.

Faces are easier to remember than are names—this because the eye-memory is employed in the former instance, while, in the latter, only the ear-memory is called into operation, unless one follows the plan of writing down the name, or of visualizing it as it appears in writing or print. As a rule, the impression of eye-perception is stronger than that of ear-perception—although, in the case of musicians, etc., the rule may be reversed by reason of the powerful operation of interest and habit, as we have seen in preceding lessons.

But there is great room for improvement in the matter of the memory of faces, in the case of the average person. Many, in fact, are sadly lacking in the power to remember, recall or recognize faces, although such power is recognized as being very important in business and professional life. Some persons, whose occupation is such that its success depends largely upon the ability to recognize the faces and personal characteristics of those with whom they come in contact, have developed this faculty to a wonderful degree. In the case of detectives, bank tellers, etc., this form of memory is manifested to an extent almost incredible to the average person. The secret, of course, lies in (1) interest, and (2) practice. In short, their memory finally acquires the **habit** of recalling and recognizing faces.

Now, there is a great difference between the recollection and the recognition of faces, names, printed words, etc. It is much easier, as a rule to **recognize** a thing once seen or heard when it is subsequently seen or heard, than it is to **recall** the thing without the reviving sight or sound. Recent experiments with college students have shown that the ratio is about three to one in favor of recognition and against recollection. The tests were made by displaying on the black board a list of a hundred words, which the students tried to impress upon the memory in a short time. After making the test, the matter was allowed to drop for the time being.

Several weeks afterward, a trial showed that very few of the hundred words were recalled by the students. But, when these hundred words were shown on a printed sheet, mixed up among several hundred other words, the body of students showed a greatly increased power of recollection, and were able to recognize quite a fair percentage of the hundred words. In the same way, we seldom are able to picture in our imagination the features of the persons we meet for the first time, though we may be able to easily recognize their features when we see them the second time, though we may not be able to "place" the person by name, or recall the circumstances of previous perception. The recognition in such cases, of course, is not a full recognition but merely the partial recognition of having seen the features before, under circumstances which we fail to remember.

The student who has followed my thread of thought in these lessons, must now see just what remedy I am about to offer to those who have trouble in remembering faces. He knows first that I am about to recommend and prescribe a study of faces, in order to awaken interested attention for them. He knows, further that I am about to recommend a detailed analysis and study of the faces which he wishes to remember. He knows, further—I trust—that I shall recommend the practice and habit of "visualizing" faces, and reviving them in memory, for the purpose of making clear impressions of them upon the subconscious records. He, also, knows that I shall recommend associating the faces with the names of the persons to whom they belong, and also with the circumstances of the meeting with such persons. Bright student, to have perceived my intentions—"go up to the head of the class!"

But, seriously, if you have followed me closely, and grasped my principles, you should be able to indicate my prescription in this case, for it is based on the fixed and certain principles of memory which I have laid down in these lessons, and which I have tried to fix in your memories by repetition and presentation in different forms of expression, so that you might view them from all angles and under many aspects of application. Get the principles well fixed in your mind, and you will have no trouble in making out the prescription for special cases, or in applying the principles in the right manner.

THE STUDY OF FACES. Many persons

have sufficient interest in faces to cause them to study faces, features, and personal appearance, almost without knowing it. But others, not having this natural interest, are apt to forget the fact that there is any such subject of study. The first class receive sharp, clear impressions of faces, while the others allow the impression of this class to slide from the perception like the proverbial water from the back of the duck. From what I have said in preceding lessons, you must realize that if you will but awaken an interest in the subject and study of faces, and personal appearance, you will find it much easier to remember them—in fact, such recollection will soon become second nature to you, and will operate almost without effort on your part.

The study of the human features is known as physiognomy. There has been much nonsense written on, or around, this subject, but there is a firm basis of truth underlying the subject. Even if one fails to agree in the interpretation of the meaning of certain facial characteristics, there will be sufficient interest left in the analysis of these features into classes and kinds, so that the mind will think of and remember them in this way. Remember, when you begin to analyze a thing, you begin to remember it more clearly—this is a fixed rule of phychology, and a feature of association of ideas, as you have seen.

Brushing aside the details of the subject (for which I must refer you to any good work of physiognomy) I shall now call your attention to a few of the leading characteristics of the human

features, from which a logical classification has sprung. Fix these classes in your mind, and use the scale to analyze the features of those whom you wish to remember. The principle of association by the rule of resemblance and difference arising from comparison of features of the person with those of other persons, will be found to operate in this case as in all others of the kind. You will remember one man more easily because he has a nose resembling that of another person whom you know very well—and so on. The very fact of the analysis, comparison, and final classification, causes you to **notice and observe** the features carefully, and this, of course, results in clear memory impressions.

Just as there are no two blades of glass exactly alike, so are there no two human faces exactly alike, though many resemble each other very strongly. Nelson Sizer, the great American physiognomist of earlier days, well said: "Though all human beings have the general human form and features—though all have eyes, nose, mouth, chin, etc., yet each one has a different face and look from another." And, as Flaubert said to Maupassant (see the quotation given in a preceding lesson), "There are not in the world two noses exactly alike; one should cultivate the art of observation and perception to a degree where he will perceive, and describe, each particular nose, or other feature, or face, in such a manner as to particularize it, and so distinguish it from all similar objects in the whole race, so

that it will always be recognized when seen, and identified with its registered impression."

**Shapes of Faces.** Faces may be classified as follows: (1) Round Faces; (2) Oblong Faces; (3) Pear-shaped Faces; (4) Square Faces; (5) Oval Faces, of two kinds, viz., (a) the larger-end uppermost, and (b) the smaller-end uppermost; (6) Broad Faces; (7) Narrow Faces. This classification is very broad, for there are many variations and combinations—but it will serve as a working scale.

**Chins.** The first rule of classification of chins, is that of drawing an imaginary line from the root of the nose, exactly between the two eyebrows, thence downward in a straight plumb-line. In the perfectly symmetrical face, this line will just graze the upper lip and chin, but in the majority of cases the chin will either (a) protrude beyond the line, or else (b) recede from it. Hence the first classification (1) Protruding Chins, and (2) Receding Chins. The first is generally regarded as indicating strength and the latter weakness. There are many degrees in this scale, of course. Subsequent classification of chins, proceeds as follows: (1) Broad-Square Chins; (2) Broad-Round Chins; (3) Narrow-Square Chins; (4) Narrow-Round Chins. Physiognomists hold that, in chins, broadness denotes practicability—narrowness, ideality—roundness denotes feeling—squareness, will. A projecting, **pointed** chin is held to indicate miserliness; and a dimpled, indented chin, is regarded as indicating the artistic temperament, and a desire for love.

**Jaws.** The law of the human face, is classified as follows: (1) Broad, firm jaws; (2) Narrow, firm jaws; (3) Broad, loose jaws; (4) Narrow, loose jaws. A firm jaw is generally held to indicate the fighting tendency—the loose jaw, the reverse.

**Mouths.** Human mouths are interesting. The old Oriental proverb runs: "A man's eyes show what he might have been; his mouth shows what he has been, and is." Mouths may first be classified as (1) Large; and (2) Small. These may then be divided into (a) upward-turned corners; and (b) downward-turned corners. Then Lips may be regarded as Tightly-Closed, or Loosely-Closed; or as Full or Thin; also as Refined or Coarse; or as Protruded, or Drawn-in; or as Straight, Crooked, Slanted, etc. Again, they may be divided into Red, or Pale, in varying degrees; Hard or Soft. Or again, as Long-upper lip, and Short-upper lip. In case of mustaches, the lip classification is capable of further elaboration. The teeth are also subject to classification.

**Eyes.** Eyes have infinite variety. The leading classifications are as follows: Wide, Narrow, Widely-opened, and Narrowly-opened; Large eye-ball, and Small eye-ball; Firm-glance, and Shifting-glance; Far-apart, and Close-together; Straight eye-lids, and Drooping eye-lids, etc. The eye-brows are also worthy of attention and analysis, the classifications being so apparent that no special note is necessary regarding it. Eyes may also be classified by colors, of course.

**Ears.** Some physiognomists consider the ear

to be the most reliable indicative feature of the face. They divide ears in three general classes, as follows: (1) Round ears; (2) Oblong ears; and (3) Pear-shaped ears. They hold that the degree of delicacy in the moulding of the ear, indicates the comparative delicacy of feeling in its owner.

**Noses.** Noses are generally classified as follows: (1) Roman; (2) Grecian; and (3) Cherubic, or "Baby-like"—with many degrees of each, and many variations. Noses may be observed as to Bridge, Point, and Wings. Nostrils may be observed for the qualities of size, degree of openness, etc.

**Hair.** Also study and classify the color and character of the hair.

A study of the above organs, from the viewpoint of the physiognomist, who seeks to interpret each in human character, will develop quite a degree of new interest in the subject. If you are "weak on faces," take up the study.

**General Appearance.** Along these same lines, the student should make a study of the general appearance of the persons he meets—their general personal characteristics, walk, carriage, little personal tricks of action, etc. Bind these together in your bundle of impressions regarding the person, and you will have a very strong associated impression of him.

In studying the facial characteristics of a person, follow the general rule of perception I have already given you—begin with the general appearance and proceed to the details in due order.

Take in the broad characteristics, and then fill in the picture in detail, as well as you can.

I cannot urge upon the student too strongly the importance of **visualizing** the appearance of the person after he has met him. That is to say, try to revive the impression of him in your imagination—call up his picture in your mind, whenever you happen to think of him, for by so doing you will deepen the impression. You will soon develop quite a faculty for doing this. Many artists are able to visualize their eye-impressions in a most vivid and distinct picture.

The average persons find it hard to bring up a mental picture of even their best friends—they depend upon "recognition" alone in the matter of knowing them. An ability to visualize faces and features in this way, will greatly strengthen your power of recognition of persons—your "memory of faces," to use the popular term.

Practice calling up the mental vision of "Mr. P. M. Westterbrook," whenever you think of him. You will find it difficult at first, but practice will soon make you perfect—and you will be well paid for your trouble. You will find yourself aided in this work if you will, at the same time, recall the scene in which you perceived the person—the principle of visual association in space, will be thus set to work for you.

If you are sufficiently interested in this phase store where they sell artists' materials, drawing of the subject, I suggest that you inquire at some books, etc. Ask the clerk for elementary drawing books, showing different shapes and classes

of noses, mouths, eyes, ears, etc. This book will aid you in classifying and studying features, so that you will easily remember them.

Finally, the "eyes are the windows of the soul" —so specialize in studying eyes, classifying them by **expressions,** as well as by shape—for if you once really get to **know** the EXPRESSION of a person's eyes, you will never totally forget the person. The expression of his eye will bring you nearer to a full knowledge of his real personality, than will anything else about him. So, try to "memorize" one's eyes, even though you neglect all the rest of his features.

## LESSON XXIX.

## HOW TO REMEMBER LOCATION.

Psychology teaches us that there are certain faculties, or special phases, of the mind which perform certain special work, each doing its own particular work exclusively. Thus we have certain faculties which are concerned with the perception of color; others with the perception of size; others with the perception of form; others with the perception of sound; others with the perception of the relations of locality; and so on —each specializing along a certain definite line. It is now positively known that certain areas of the brain are devoted to special work of the kind just mentioned. So true this is, that if such certain centres are injured, the mind finds it very difficult to function along those special lines. For instance, certain injuries to the brain have resulted in complete loss of the sense of location or direction; others in the loss of recognition of names, words, etc.

Practical psychologists have lifted this subject out of the realm of theory, and have devised methods whereby any special faculty may be developed by appropriate courses of study, practice, exercise, etc. These things have been taken advantage of in this series of lessons, and form a part of the instruction for the development of special forms of memory. This, because, as I have repeatedly stated, the cultivation of any faculty of the mind results in an improvement of the

kind of memory connected with that phase of mind, and vice versa. The explanation, of course, is found in the fact that each faculty of the mind may be said to have its own memory—all forming parts of the whole memory, just as all faculties form part of the whole mind. The cultivation of a faculty, results in strengthening the memory allied with it; and, likewise, the cultivation of any phase of memory results in the strengthening of the particular mental faculty with which it is connected.

It follows, of course, that the general plan that I have outlined in the cases of name-memory, and face-memory, is also applicable to any and all forms of special memory. Whatever strengthens the perception of a faculty, also strengthens its correlated memory. The general rule once known, the rest becomes simply the method and details of application of the principle. The psychologists classify the perceptive faculties under the following order: Form, Size, Weight, Color, Order, Number, Tune, Time, Locality, Motion and Words. Interest, study, practice, and exercise will develop any of these perceptive faculties, and, of course, the memory attached to each. Apply the rules given under the lessons on Names, and Faces, respectively, to any of this list, and you will get the same result. Face-perception, of course, comes under the head of Form; and Name-perception under the head of Words, in the above classification.

Proceeding to the consideration of Locality-Perception, and Locality-Memory—the subject

of this lesson—I naturally give you the same kind of prescription as in the preceding lessons, by applying the general principles to the special requirements of Locality. This being so, I will not go into as many details as I did in the preceding cases, for I can now trust to the intelligence of the student to apply the general principles of memory training to this case without the need of tiresome repetition. In fact, in my personal classes, I make the pupils map out their own lesson on this subject, by drawing out of them the information they have already acquired —the Socratic Method, you will realize. But in these printed lessons, a little more detailed instruction is required, from the very nature of the case.

The faculty of Location performs the work of the perception and memory of Places, Positions, Locations, Directions, etc. It may be called "the geographical sense," although this limits it, in a way, for it is manifested in the sense of location of the heavenly bodies, as well as of the things of earth. Those in whom this faculty is highly developed, are able to quickly and readily perceive, and equally easily remember, the directions and locations of things, the places in which things exist, the order of position in space, land-marks, points of the compass, the general "lay of the land," streets, roads, water-courses, etc. Such persons never get lost or confused as to location or direction. They have the "sense of the North" fixed in their subconscious mind, and adjust other directions almost automatically. Seafaring

men, hunters, trappers, explorers, and great travellers, have this faculty strongly developed. And, of course, their memory on these points is remarkably strong. Others, deficient in this faculty, are continually losing themselves, and getting "mixed up" regarding locations, directions, etc.

To those who are deficient in this phase of mental action, and memory, I would advise, first of all, the deliberate cultivation of INTEREST in all things related to the subject. Let them first begin to think of the direction of any place of which they are speaking or thinking, so that they may **feel** that it is "that way" from them. Also let them try to visualize the direction from one place to another, when they are speaking of different places. Let them study maps, making imaginary journeys from one place to another, following the lines of the railroads, steamships, or rivers, as marked on the maps. After having acquainted themselves with the different parts of the world, in this way let them make imaginary journeys "in their minds," without using the map. Let them plan out trips in this way, and then take them—mentally. Imagine that there is a hidden fortune awaiting you at some given place, and then see how you can reach this place as quickly and directly as possible.

Such persons should observe the various landmarks on the streets over which they travel. They should travel over new streets to take them to old destinations. Walks in strange localities, will help in this way. Try to acquire the "hom-

ing sense," so that you will intuitively recognize the general direction of your home, from whatever point you may be at the moment. This sense is really a subconscious knowledge based upon the impressions placed within it by your interested observation, though you may not be aware of them afterward.

A little exercise with your pencil, in making maps of the walk you have just finished, will help some. Take the map of your city or locality, and mark out a trip, which you should afterwards take without referring to the map. Hunt out strange corners, and streets, roads, and drives, your locality—you will soon grow interested in the task, and will, at the same time, be strengthening your faculty and memory of location and direction. Play the game of travel by marking down the landmarks, etc., when you return. It will help to take these trips with a companion, each playing the game against the other, and trying to score a greater number of points of this kind.

If you are going on a trip away from home, far or near, prepare yourself by going over the trip bythe aid of a map, before you actually start out on the journey. Fix in your mind the various points, stops, directions, etc., and compare them with the places when you actually reach them on your journey. You will find that a fresh, and entirely unexpected, interest will be awakened in this way. Study maps of the cities that you intend visiting, taking note of the principal points of interest noted thereon, their location, distance

and direction from each other. Then travel over this mental route when you reach the place. It will develop a new, and very interesting, game for you.

I have met a number of persons who were perfectly familiar with the general location, direction, distances, etc., of cities which they had never before visited. Upon investigation, I always found that these persons were very fond of maps—had the "map habit" strongly developed —and when they reached a place, they always felt that they knew it, by reason of their preliminary mental visit by means of maps, guidebooks, etc.

Again, after you have visited a place, and returned home, try the experiment of re-visiting it in your imagination, and bringing before your mind's eye the general "lay of the land," direction, distances, location, etc. I have known persons who have been able, in this way, to reconstruct an entire trip of several thousand miles; while, on the other hand, I have known persons who seemed to be in entire ignorance of the road travelled, direction taken, or location of any point of even a short trip. Memory followed the interest, or lack of it, in each case.

In conclusion, I repeat the now familiar advice: Take interest; practice; exercise; make associations. That is the whole thing in a nutshell, in location as in names and faces. But remember, that INTEREST is the grandparent of all of the other requisites. Secure the grandparent, and the rest will come in due course of events. If you

were hunting hidden treasure, your locality faculty and memory would grow like a gourd—for the Interest would be there! Moral?

## LESSON XXX.

## HOW TO REMEMBER NUMBERS, COLOR AND TUNE.

In the preceding lesson, you will remember that I called your attention to the list of the various classifications of the perceptive faculties of the mind, and the memory attached to each. You will, of course, also remember that I told you that the principle applicable to one form of memory—the faculty of perception—was likewise applicable to any or all of the others, the details being adjusted to meet the specific requirements of each faculty or phase of memory. Accordingly, in this lesson, I shall ask you to apply these principles and rules to the three respective faculties, or phases, of mind and memory, known as Number, Color, and Tune.

NUMBERS. The faculty of Number manifests in mental operations concerning number, figures, calculation, etc. This is the mathematical sense, and its memory is the mathematical memory. Those in whom it is developed readily grasp the relation of number between things, and easily remember facts and details concerning them. Those in whom it is deficient, have little or no grasp of such things, and have "a very poor head for figures," and a very poor memory of them.

This faculty, and its correlated memory, may be strengthened and trained by applying the familiar psychological rule of Interest, Exercise,

and Practice, coupled with associations of a pleasant nature. Interest in numbers may be built up by a series of voluntary exercises in mental arithmetic, undertaken with the idea of seeing "just what there is in it," rather than as an unpleasant task. I have known middle-aged men to take up this work, and find a new interest in it, whereas they had detested it in their school days. The adult mind will discover fresh interest in many elementary studies, if it will return to them as a pastime.

The memory of dates, prices, figures attached to things, etc., is generally regarded as depending upon the number-memory, or the faculty connected with it, and many teachers have endeavored to develop such form of memory by exercise of the faculty of Number. Such exercises, while valuable, are not the ones really necessary in this case, however. The memory of dates, prices, figures attached to things, etc., is not concerned with the mathematical sense. The fact that mathematicians usually have a good memory for such things, is simply because they are interested in figures, and have acquired the habit of memorizing them in connection with their work. Some eminent mathematicians, however, have a poor memory for figures unconnected with mathematical operations.

The secret lies here: These dates, prices, etc., are simply symbols of order, just as words are symbols of thought. A figure, used in this way, has no mathematical value or connection, but is simply a symbol of order, or relation, just as is a

letter—in fact, a letter answers as well in some cases of tabulation of order. The memory of figures used in this way, is simply the memory of form, and is akin to the memory of letters or words. The mathematical memory of figures, is the memory of figures and numbers as **abstract** things, and not as things in themselves. To persons lacking in this faculty, figures really mean nothing, and are not easily remembered unless associated with their form and position or sound —eye-memory or ear-memory, pure and simple.

The remedy for poor memory of dates, and figures used in similar ways, is to supply the eye-impression, and the ear-impression, thus robbing the figures of their purely abstract nature, and breathing the breath of life into them. This may be done by associating figures, or numbers, with their appropriate **sight and sound.** Think of 1776 not as an abstract thing, but as something **looking this way,** or **sounding that way,** and you impress the figures upon your memory. By looking at the printed or written figures, and then repeating them aloud, you fasten them in your memory by two kinds of impression. You wish to memorize a telephone number, or date, for instance—write it down several times, and repeat it aloud at the same time—and you rivet it in your memory. The more often you revive, and review it, the greater the likelihood of its future recollection. You either **see** the number in your mind as 1776, or else you **hear** it as "seventeen-seventy-six." If you wish to connect it with the name of the owner of the telephone, for instance, you

should write it down: "John Doe—1776," and also repeat it to yourself, aloud, thus: "John Doe —seventeen—seventy-six!" Repeat this several times, with interest-attention and you will have the associated name and number sticking in your memory like a burr in the wool of a sheep. Try it! In the same way, students have succeeded in easily memorizing dates by making a mental picture of the battle, treaty, discovery, etc., with the date in blazing letters over it—a revival of this picture, sufficiently often, succeeded in making the association permanent. If you can picture Christopher Columbus Discovering America, with the figures "1492" on the banner over his head—and will review the picture a number of times, at intervals—you will always connect the two. In the same way, picture the Declaration of Independence, with its signers (the familiar picture, you know) with "1776" in red figures on the wall, and you will never forget the date. In either case, the mention of the occurrence will bring up the mental picture with its painted letters. Or, in the same way, you may picture Napoleon Bonaparte, with the dates of his birth and death appearing over his head—"1769—1821."

Figures of this kind may also be associated with other figures of interesting or well-known things. For instance, Napoleon's birth may be remembered because the same figures happen to be our house number, or office number, or telephone number, etc., or **vice versa,** the best known giving the key to the least known. Or, by means of doggerel verses, so popular with some teach-

ers of memory—these have their place, in certain instances, but must not be "worked to death;" "salt is a good thing, but who would want to be placed in pickle?" I shall call your attention to these things in a later lesson.

Finally, as at the beginning, remember: Interest, Practice, Exercise!

COLOR. As I have said, one of the perceptive faculties of the mind is concerned with the cognizance, comparison, and recollection of the colors, hues, tints, and shades of things. Like any of the other perceptive faculties, this one may be developed by interest, study, practice and exercise. The average person has a comparatively limited sense or perception of color, while others manifest an almost marvellous ability in the direction of discrimination between, and recognition of, thousands of tints, shades and hues of color. In a preceding lesson I have called your attention to the mosaic workers in the Vatican who were said to have readily distinguished between thirty thousand tints and shades of color. A good knowledge of color, however, does not require such an extraordinary perception of shades and tints, for there are only about two hundred tints and shades of color employed in modern art and commercial coloring. And, as many of these two hundred are but variations of a smaller number, the student may reduce his list to about fifty principal tints and shades which will give him a good working knowledge of the subject, and which will serve as a foundation for further extension in case the same is deemed de-

sirable. I need scarcely add that by "knowledge" of color, I also mean recollection and recognition of the same—for the two phases are always correlated.

Let the student procure a list of the principal shades and tints, from some reliable dealer in artists' supplies—a list giving a sample of each tint and shade—and acquaint himself with the names of each. Then let him begin to practice identifying each color by name, and each name by color. A little practice will impart great proficiency. The next step is to study the variations of each principal shade or tint, and so on—the principle of classification will be valuable here, as an aid to analysis and memory. In a few words, the method is: Interest, Practice, and Exercise. Remember, the old rule of psychology: "Faculties are strengthened and developed by USE!"

The following table of colors may prove of interest and use to students:

## TABLE OF COLORS.

**Primary Colors.** All colors are derived from one or more of the Three Primary Colors. These primary colors are as follows: (1) Red; (2) Blue; and (3) Yellow. From these primary colors are derived the Three Secondary Colors, as follows:

**Secondary Colors.** The three secondary colors, are as follows: (1) Purple, resulting from an equal mixture of Red and Blue; (2) Orange, resulting from an equal mixture of Red and Yel-

low; and (3) Green, resulting from an equal mixture of Blue and Yellow. You will notice that each secondary color is derived from two primary colors, mixed in equal proportion. A rule of color harmony is that: "A secondary color always harmonizes with the primary color not included in its creation." For instance, Orange is composed of Yellow and Red, therefore it must harmonize with Blue, the primary color not included in the blending which created the Orange.

**Tertiary Colors.** The third class of colors, known as the Three Tertiary Colors, are derived from the blending, in certain proportions, of two of the secondary colors. The three tertiary colors are: (1) Olive, derived from a mixture of Green and Purple; (2) Russet, derived from a mixture of Orange and Purple; and (3) Lemon, derived from a mixture of Green and Orange.

**Neutral Colors.** White and Black are known as "the neutral colors," and the authorities differ regarding their place on the scale of color. Some authorities add Gray to the list of the neutral colors. An authority gives the following as the composition of the neutral colors: "Black is composed of equal parts of red, yellow, and blue; White, of five parts of Red, three parts of Yellow, and eight parts of Blue; Gray (normal), of White and Black." Browns are derived from disproportionate combinations of Black, Red, and Yellow.

**Hues, Tints, and Shades.** Hues of color result from the blending of two or more of the primary

colors, in various different proportions. Tints result from blending White into the Hues, the amount of White determining the tint. Shades result from the blending of Black into the Hues, the amount of Black determining the shade.

**Harmony.** Certain colors harmonize and agree (see note above, regarding the harmony of the primary colors). Others manifest in harmony, or a lack of agreement, and produce an unpleasant effect upon a mind trained to a proper arrangement of color. I cannot go further into this matter in these lessons, as it would lead us far from the main subject. I advise the student who wishes to go into the details of the subject of color, to study some of the little handbooks on the subject, which are to be found in the public libraries, or which may be bought at any bookstore or artist's supply shop. Study of this kind will awaken interest—and that is half the battle, as you know.

TUNE. The perceptive faculty concerned with Tune, has its correlated memory, of course. The faculty, and its memory, are concerned with the perception, cognizance, comparison, appreciation and recollection of tune, music, harmony, melody,etc. It is this faculty, well developed, that is known as "the musical sense." Its development varies greatly among individuals. In some it manifests to a marvelous degree, while in others it is almost dormant. What a world of difference between the two individuals, one of whom can carry in memory the most difficult musical composition, and the other being in-

capable of recognizing even the simplest and most popular tune!

The faculty, and memory, of Tune may be greatly developed by practice. The old rule applies here also: Interest, Practice, and Exercise —but Interest is the grandparent of the others. The rules regarding the Cumulative Method of Memorizing words, verses, etc., may be applied to memorizing the score of music, or the notes, or air, themselves. The rules for practice given in relation to memorizing verse, should be followed by the student of music, for they apply equally to his requirements. A few bars may be memorized; then reviewed and a few more added; then more review and addition; and so on to the end. The same principle is involved, and the same rule applies, in both cases—words or notes. By notes, I mean notes **printed, or sounded.** It is better to associate both the printed note, and its sound, in the memory—thus calling into operation both eye-memory and ear-memory.

In memorizing a musical composition, the student should not only memorize the notes, printed and sounded—he should also memorize the various symbols indicating time, movement, expression, etc., not only the appearance on the printed page (for eye-memory) but also the effect of the same upon the rendition of the composition (or ear-memory)—sight and sound again. In short, the entire composition should be memorized, from first to last, as it appears on the printed

page, and also as it sounds when properly interpreted and rendered.

That the general principles of memory training are applicable to the study and practice of Music, I have proved by my success in teaching many students along these particular lines. This, in spite of the fact that my personal technical knowledge of music is very elementary, and that I am not a practical musician, alas! in any sense of the word. In this case it is "do as I tell you—not as I do," and it works out satisfactorily, for my principles are fixed and universal, and do not depend upon personal manifestation for proof in cases of this kind.

I am perfectly convinced, that if I were to devote the time and concentrated attention to the task, I could increase my knowledge and memory of music a hundredfold, within a short time —for I have so instructed average students that they have attained those results. But, alas! I am able to be a musician only vicariously, and by proxy for my work requires too much of my time and attention to admit of my doing these things at first hand. I mention these personal facts, for the reason that I do not wish to sail under false colors in the matter. If you will but put into practice the general principles of memory training given in these lessons, you will find that they are as equally applicable to music perception and memory, as to any of the other phases of the subject to which I can add the weight of personal demonstration. Principles are above persons.

Persons come, and persons go—but principles are eternal, and universal in their application!

OTHER FORMS OF PERCEPTION. The other perceptive faculties, such as those which are concerned with size, motion, weight, etc., may be developed, and, of course, the memory connected with each, increased, by the simple application of the rules and methods given in connection with the faculties which we have considered in this and the preceding lessons. Interest, analysis, comparison, classification—and finally, practice, exercise, and USE! The secret lies in these things! But INTEREST is always a prerequisite.

## LESSON XXXI.

## MEMORY OF EVENTS.

One of the most valuable phases of memory-training, to the average man, is that which is concerned with the memory of events, happenings, occurrences, facts and incidents of daily experience, etc. Experience is a most valuable thing to any man—frequently it is purchased at a very high price—and one does not like to lose the memory of it. Again, the perception and memory of things of interest to one in his occupation—of "news interest" to him, in fact—is a valuable activity of his mind. The cultivation and development of this faculty, and memory, is well worth while. The faculty in question is that one of the perceptive group known as the Faculty of Eventuality.

It will naturally occur to the student that the first step in the development of this faculty should be that of the development of the general power of perception—the main spring of the entire perceptive mechanism of the mind. This is correct for the work must begin right there. Again, the faculty of analysis, comparison, and classification must be employed in developing the very important phase of perception and memory. In fact, in order to attain proficiency in the perception and memory of events, it is necessary to develop, train, and strengthen—to increase the general proficiency of—the entire mental mechanism concerned with observation, by means of

the general principles, rules and methods which I have given you in the course of these lessons.

This, because, events are composite—composed of all forms of perceptible and perceived contents. Events are composed of the coming, and happening, of things—and things are composed of properties, qualities, and attributes—so that in order to clearly perceive and remember events, we must be able to perceive the qualities, properties, and attributes of things, as well as their actions and activities. The student who has put into practice the general principles and methods laid down in these lessons, will have already developed his powers of observation, and will be well advanced on the road toward the efficient perception and memory of events. But, nevertheless, a few additional suggestions may be given in this lesson, which will serve to bring out the general teaching more clearly.

**Importance of review.** In my personal instruction, I have, at times, found pupils who seemed to progress very rapidly in other forms of memorizing and memory culture—particularly in the phase of memorizing by the Cumulative Method—but who seemed to have "struck a snag" in the particular phase of memory which we are now considering, namely, the memory of events. In the early years of my teaching these cases caused me much trouble, concern, and an extraordinary expenditure of time and energy, for I had not as yet discovered the particular weak point in such cases. I always cured the trouble, but it was like firing a shot gun at it, whereas a single well-di-

rected bullet would have done the work. I was like a doctor, puzzled in his diagnosis, who cured the patient only after prescribing his entire list of remedies, in a grand combination, so that he never knew what really had worked the cure. Finally, however, I managed to work out the solution, and here it is, simple enough to be sure, but easily overlooked. I found that the weak point in the mechanism of this form of memory was simply **the lack of review.**

These puzzling students were excellent in perceptive power, and up to the mark in analysis, comparison, and classification—the associative links were strong, and there seemed no reason why they did not make progress in this branch as in the other phases of memory. As I have said, I finally worked out the answer to the problem. I found that while, in the other phases of memory, there was the natural and logical necessity of **constant review** for the purpose of addition, under the cumulative system, or the rule of strengthening impressions by reviewing them in consciousness, nevertheless, in this particular case there had been no apparent necessity for review, and, consequently no review work was given or performed. Ah, ha! said I—here is the weak spot in the machinery. No sooner perceived than the remedy was applied.

Here is the remedy I prescribed—and it worked perfectly. I bade the pupil to sit down quietly every night, and then and there to review the events of the day just finished. The various persons he had met; the conversations that had

been had; the details of work that had been performed; in short, as many things, facts, and events of the day, as possible, were reviewed in retrospective memory. At first, the pupil could remember very little, comparatively, of the day's doings, but, in a short time a great improvement was noted. This very naturally, because the practice and exercise not only strengthened the memory along these lines, but also sharpened and stimulated the particular perceptive faculties involved, as well as the other mental powers called into operation in the work.

I then added to the prescription, by bidding the pupil not only to practice his nightly review of the day, but also at the week-end to review the events of the preceding week, in regular sequence —a grand review as it were. Then developed the monthly review; and finally the general "look backward" at the end of the year. Of course, the weekly review was less detailed than the daily; the monthly less than the weekly; and the yearly still less detailed, as only general events and occurrences were called into mental vision.

The results of this improved system were remarkable, not only as to the marked and often marvelous improvement in the faculty and memory, but also as regards the rapid rate of progress. But my joy at the discovery and its result, was tempered by my chagrin at my failure to discover this particular point of practice much sooner. It was so obvious that I had overlooked it!

In view of the above facts, you may imagine

my feelings when, several years ago, an American friend attending my school as a visitor, and listening to my emphasis upon this particular point, in one of my class lectures, afterward said to me: "Professor, that point reminded me of something that Thurlow Weed says in his 'Memoirs'—surely you have both drunk at the same fount!" I had never even heard of Thurlow Weed, the American statesman, at that time, but I hunted up his book shortly afterward, and therein found the following statement—note the wonderful coincidence. Mr. Weed said: "Some of my friends used to think that I was cut out for a politician, but I saw at once a fatal weakness. My memory was a sieve. I could remember nothing. Dates, names, appointments, faces—everything escaped me. I said to my wife; 'Catherine, I shall never make a successfnl politician, for I cannot **remember,** and that is a prime necessity of politicians. A politician who sees a man once should remember him forever.' My wife told me that I must train my memory. So, when I came home that night I sat down alone and spent fifteen minutes trying silently to recall with accuracy the principal events of the day. I could remember but little at first—now I remember that I could not then recall what I had for breakfast. After a few days' practice, I found that I could recall more. Events came back to me more minutely, more accurately, and more vividly than at first. After a fortnight or so of this, Catherine said: 'Why don't you relate to me the events of the day, instead of recalling

them to yourself? It would be interesting, and my interest in it would be a stimulus to you.' Having great respect for my wife's opinion, I began a habit of oral confession, as it were, which was continued for about fifty years. Every night, the last thing before retiring, I told her everything I could remember that had happened to me, or about me, during the day. I generally recalled the very dishes I had for breakfast, dinner and tea; the people I had seen, and what they had said; the editorials I had written for my paper, giving her a brief abstract of them; I mentioned all the letters I had seen or received, and the very language used, as nearly as possible; when I had walked or ridden—I told her everything that had come within my observation. I found that I could say my lessons better and better every year, and, instead of the practice growing irksome, it became a pleasure to go over again the events of the day. I am indebted to this discipline for a memory of unusual tenacity, and I recommend the practice to all who wish to store up facts, or expect to have much to do with influencing men."

The student who has followed me in this series of lessons, will readily recognize the psychological principles employed by Mr. Weed in his system of self-training, though, in all probability, he was unaware of the real principles involved. There is one point, however, to which I should call your attention, and that is that the subconscious mind seems to realize that it will be called upon each day to reproduce that which has been

impressed upon it. Accordingly, it arranges its tension so that it will operate in more of a "hair trigger" manner. Moreover, it becomes very much more receptive to the impression of events, and seems to be anxious to store away as many details as possible, as clearly as possible. In short, it responds to the increased call made upon it, and increases its efficiency!

To some psychologists, review work has seemed like a kind of mental rumination, or "chewing the cud" of the perceptions previously received. I agree with this idea, and, moreover, I believe that in such work the subconscious mind really "digests" its impressions, and assimilates them much better than in the ordinary condition of things.

Without carrying the idea to its full application, many will find it a valuable plan to review in memory the events of some important conversation, action, or business transaction—going over it in detail, and thus impressing it with greatly increased strength and clearness upon the memory. Few persons do this, but those who know its value, and practice it, have a great advantage over those who do not. Many of the world's greatest men of affairs follow some such general rule about their important transactions, etc. It is a favorite plan among diplomats, and financiers. Take a leaf from their books!

## LESSON XXXII.

## ASSOCIATIVE MEMORY PEGS.

Many systems of mnemonics have been built up of artificial pegs upon which to hang the thing to be remembered. While many of these pegs are useful to a limited extent, they cannot take the place of rational, logical memory training and culture, and those practicing them soon discover their limitations and too often lose all interest in the subject. However, the student who has grasped the real psychological principles of memory training and memorizing, may take advantage of some of the better of these ideas. For that reason, I herewith include them in the lesson.

**The Topical System.** I have mentioned the old system of Simonides, in an early lesson of this course. It is based upon location. Things are remembered by reason of having been assigned places in a mental diagram. **For details of this system, see Lesson XIII.** This idea of Location—the "Topical System"—serves as the basis of a number of "memory systems," ancient and modern. It is very simple and easily applied.

**Figure Alphabets.** A number of other "memory systems" are based upon the foundation established by Winckelmann, in the Seventeenth Century. This system taught what are now known as "figure alphabets," in which figures are represented by certain consonants, and are

thus memorized (!). Here is Winckelmann's Key:

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
|---|---|---|---|---|---|---|---|---|---|
| B | C | F | G | L | M | N | R | S | T |
| P | K | V | | | | | | | |
| W | Z | | | | | | | | |

(Vowels and letter H not counted.)

The system is applied by memorizing words containing the figure-letters in proper order. As an example of its cumbersome nature, I need point to one typical example. Here it is. The year 1480 is recalled by remembering the words "BiG RaT." The idea of Big Rat probably suggested something occurring in that year, which history has failed to record. A later user of this same alphabet, employed the sentence, "Brave Novices Routed British" to indicate the year 1781, the date of the Battle of Yorktown, the initial letter of each word being used for the purpose. Let us pass on!

**Fanciful Association.** Another class of "memory systems" are based upon a fancied resemblance between the idea or thing to be remembered, and some combination or sentence composed of words in ordinary use. Pliny Miles, an American, (1845) was the founder of this class of systems—many others have employed the idea since his time. Here is the way it works out: Battle of Marengo—"Marry and go"; Borodino —"Borrow a dinner"; Manitoba—"Man at a bar"; Saskatchewan—"Sis, catch a swan," etc.,

etc. Need I dwell further on the subject? Miles also prepared a table for memorizing dates, in which each year was represented by a word—you associated the event with a word, and thus remembered the date thereof. Thus, if the year 1492 was represented by the word "swan," you could say: "On the water Columbus saw swimming a Swan," and thus would remember that in 1492 Columbus discovered America. Or, Napoleon's birth and death might be recalled by a sentence including his name and the two date-words. This is the most ingenious date plan ever devised, and has been used by many system-makers as an original discovery. The student may make up a list of his own, if he desires, using words in common use, such as cat, dog, horse, etc. **(See also following section on "Date-Words.)**

**Correlatives.** I have spoken, in a previous lesson, of the cumbersome and very artificial system of binding words together by intermediate words. Do you remember the story of the young man and his two girls? This idea was probably first advanced by Dr. Knothe, a German, in 1848, and was elaborated and extended by Pick, Loisette, and other well known teachers of a later day. Pick, however, did not confine himself to this idea, but advanced some of far more value, in my opinion. I consider the Correlative System as too cumbersome to be of much practical use, and therefore have not seen fit to give it much space in these lessons. Students wishing to pursue the idea further, are referred to the

public libraries of the large cities, where they will find many works bringing on this artificial method. **(See Lesson XXII, for further details.)**

**Date-Words.** John Sambrook, an Englishman, about 1878, published an ingenious system of memorizing dates and figures, which has more merit than many others, and is capable of efficient use, within limits. This system is based upon the fact that the vowel sound of each figure, from 1 to 10 is different, except in the cases of 5 and 9—this latter is remedied by giving the "I" the long sound in 5, and the short sound (and in "tin") in the case of 9. With this in mind, one may construct sentences made up of short words bearing the vowel sound of the figure, as for instance: a combination of the words "Guns for Inds poor," would represent 1492, the date of Columbus' Discovery of America, the home of the Indians.

Another variation of date-words, is that in the system of Prof. Shedd, of New York, in 1888, in which dates are remembered by words having the **number of letters** indicated by the figures in the date. For instance: Napoleon's birth (1769) is recalled by the sentence "A strange mighty conqueror," and his defeat at Waterloo (1815) by the sentence, "A Waterloo I found." Interesting! and probably more elastic than some of the other date-words systems.

It will be noticed that the great majority of these "patent systems" of memory seemed devised with the main idea of memorizing historical and other dates—though that is but a single, and

not so very important, phase of memorizing and memory training. Many of the best authorities have held that in these systems undue importance is attached to this special phase—over emphasis placed upon it. I heartily agree with this idea. I believe that there are easier and better methods of remembering dates—I have given some in this course of lessons, which may be adapted in various ways, varied, extended and improved upon, by the resourceful student. And, for that matter, if one really wishes a "patent system" of remembering dates, why not fall back upon the old, and well-tried plan of doggerel verse, which will be found far better than any of the date-word, or figure-alphabet systems, in my opinion. I shall now present to your attention a few varieties of the doggerel verse methods of memorizing dates, historical facts, etc.

DOGGEREL VERSE METHODS. This method of memorizing facts and dates, is very, very old, but really has more merit than one would think at first sight. Many persons have used verses and rhymes of this kind to remember dates, and facts—who has not done so, in fact? —with more or less success. At any rate, this plan has the merit of simplicity, and it is a psychological fact that anything that "jingles," and has rhythm, tends to stick in the memory more closely that plain figures and prosy facts. The "jingle" does the work, in many cases.

Here are a few choice samples, culled from the pages of the history of mnemonics, many of which are very familiar to all English and Amer-

ican readers, without doubt. We, French, have a set of our own, which I shall not mention in lessons intended for students speaking the English language. Personally, I prefer the spirit and style of our French rhymes of this kind, but that is quite natural, I suppose, there can be no real dispute or argument about Taste, you know!

"In fourteen hundred and ninety-two
Columbus sailed the ocean blue."

"In eighteen hundred and sixty-one
Columbia's Civil War begun."

"In seventeen hundred and sixty-nine
Napoleon's sun began to shine;
In eighteen hundred and twenty-one
At last did set Napoleon's sun."

"In seventeen hundred and seventy-six
The Yanks taught Johnny Bull some tricks."

"In nineteen hundred and fourteen,
The Great War's start is plainly seen."

Sad doggerel; but it sticks in the meshes of the memory. You may make such to order, if you wish.

The same idea has been applied to historical events, such as a list of sovereigns, or rules of speech, etc. The field is large, and, as the Americans say, "The season is open." Here are a few of the better known examples, which have really

been of service to many good persons, old and young.

## DAYS AND MONTHS.

"Thirty days hath September,
April, June, and November;
All the rest have thirty-one,
Except the second month, alone."

Some of the French peasants use the four finger-knuckles of the closed fist to determine the numbers of days in the month, as follows: The list is run over, January, February, March, etc., using first a knuckle and then the hollow between the knuckle and the next one. The knuckles are the months having thirty-one days, while the hollows represent the ones having but thirty days, the second month, February, always forming the exception, of course. When the fourth knuckle, July, is reached, jump back to the first one, which becomes August—which brings the two thirty-one day months, July and August, together.

## ENGLISH SOVEREIGNS.

"First, William the Norman; then William, his son;
Henry; Stephen; and Henry; then Richard; and John.
Next, Henry the third; Edwards, one, two and three;
And again, after Richard; three Henrys we see.

Two Edwards; third Richard; if rightly I guess,
Two Henrys; sixth Edward; Queen Mary;
Queen Bess.
Then, Jamsie, the Scotchman; then Charles,
whom they slew;
And, then, after Cromwell; another Charles,
too;
Next, Jamsie, the second, ascended the throne;
Then William and Mary, together, came on;
Then Anne; four Georges; fourth William; are
seen,
Then came good Victoria, Britain's long-reign-
ing queen.
Then Edward, the seventh, entered, flourished,
soon passed;
George, fifth, then ascended—may he long be
the last."

## SHALL AND WILL.

"SHALL, in the first person, simply **foretells;**
In WILL, **threat** or **promise** continually dwells.
SHALL, in the second or third person, doth
**threat,**
While, WILL, in that case, simply **foretells**
future feat."

## EASTER.

"March twenty-first, the Spring doth come,
And Nature's filled with laughter.
Then, watch for next bright silver moon,
That follows close thereafter."

## ASSOCIATIVE MEMORY PEGS

"For when that moon grows round and full,
Then Easter will be here
The very Sunday after
In each and every year."

"But if it be on Sunday,
That moon shows 'full' to sight.
Then Sunday next is Easter,
The day when all is bright."

## THE PARTS OF SPEECH.

"Three little words, you often see
Are Articles, **a, an,** and **the.**
A Noun's the name of any thing,
As **school,** or **garden, hoop** or **swing.**
Adjectives show the kind of noun,
As, **great, small, pretty, white,** or **brown.**
In place of nouns the Pronouns stand,
**Her** head, **his** face, **your** arm, **my** hand.
Verbs tell us something to be done,
To **read, count, laugh, sing, jump** or **run.**
**How** things are done, the Adverbs tell,
As **slowly, quickly, ill** or **well.**
Conjunctions join the words together,

As, men **and** women; wind **or** weather.
The Preposition stands before
A noun, as **in,** or **through,** a door.
An Interjection shows surprise,
As, **Oh!** how pretty—**Ah!** how wise.
The whole are called **Nine Parts of Speech,**
Which reading, writing, spelling, teach."

Jingles, or rhymes, of this kind, may be used to the best advantage in memorizing lists of arbitrary things, which have but little natural associative connection or links. In the one, above given, stating the Nine Parts of Speech with examples, the otherwise "dry" and technical definitions, which generally give the child much trouble to commit to memory, are given the sugar capsule of rhythm, and jingle, and, as a consequence, an association is made, and the child readily recalls the definition. The student may "make up" any number of these doggerel jingles in order to make an easily recalled association when the same is lacking. But, of course, these should not be employed where a natural, logical association is present.

Another form of association of this kind, which also has some merit within limits, is that of forming words, real or "made to order," the letters of which correspond with the first letters of a list of other words, or names, to be remembered. One of the best known acrostics of this kind is the one created by Dr. Watts, many years ago. It consists of the coined word "VIBGYOR," the letters of which suggest the list of the principal colors of the solar spectrum, in the exact order in which they appear on the scale, namely: Violet, Indigo, Blue, Green, Yellow, Orange, Red. Many have found this simple coined word to be very handy when called upon to recall the colors of the spectrum in the order of their appearance.

Nearly every person has made use of some lit-

tle trick of artificial association, in order to fasten in his memory some name, or initial, that he had experienced difficult in recalling previously. For instance, I knew of a case in which the surname "Mohrman," was recalled by a fancied resemblance of the person to Brigham Young, the **Mormon** leader. A bank cashier, named "Banks," was identified with "Bank," because he was always seen there. The name "Rugg" was recalled by association with a carpet rug, the man being in the carpet business. A man named "Moon" was associated with his round, moon-like face.

In fact, we find many names recalled in this way. Such associations serve their purpose, and often help to fix in memory a name peculiarly elusive—and no one need hesitate about employing them in this way. But when one attempts to build up a system of memorizing on such artificial principles, his card-house is apt to collapse, because it grows top-heavy.

In cases, where the association is not spontaneous, and does not naturally suggest itself, there is generally found to be as much work in recalling the associate "key" word, as in recalling the name itself. Moreover, such methods if carried too far often end in weakening the natural faculty of memory of names, etc. At the best they are but crutches to be used in relieving one at times, the continued use of which, however, tending to weaken the natural muscles of the memory. To all advocates of such systems,

methods, and plans, I have but one answer: BACK TO NATURE!

In conclusion, dear students, I would again say: Remember these points—Interest, Attention, Natural Association, Practice, Exercise, REVIEW! For in these things, and in them alone, is to be found the Secret of Memory!

FINIS.

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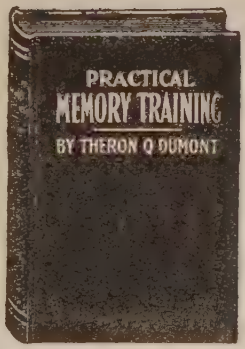


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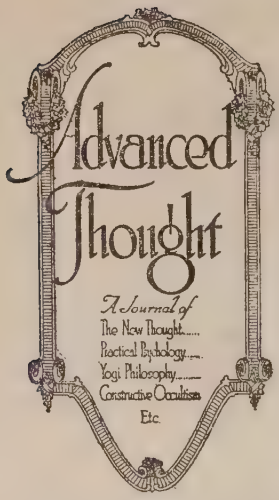


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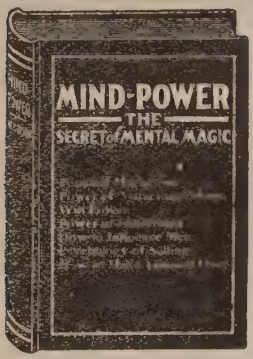


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